PREFACE

The service manual has been specially prepared to provide all the necessary information for the proper maintenance and servicing.
You have now a new type of scooter that has many techinal features such as:
V-belt drive automatic transmission
Forced air-cooling system
CDI ignition system
Electric starter system

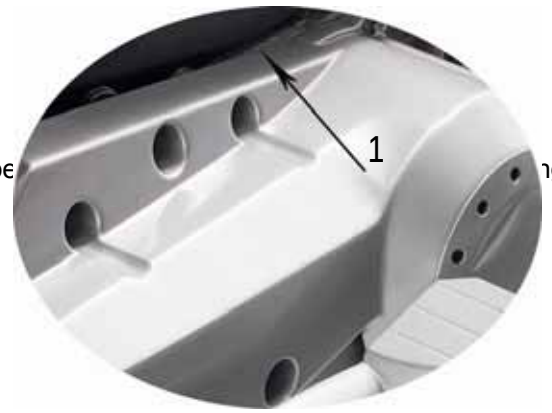
Those who will be servicing the scooter should carefully review the manual before performing any repair or services. Major modifications and changes incorporated later will be advised to GENERIC product distributor in each market. Therefore, if newest information is requested in the future, please contact the local GENERIC distributor.
The scooters distributed in your country mignt differ in minor respects from the standard specification and, if they do, it is because some minor modifications had to be made to comply with the statutory requirements of your country.

CONTENT

TYPE IDENTIFICATION
FUEL AND ENGINE OIL
BREAK-IN PROCEDURE
PRECAUTIONS AND GENERAL INSTRUCTIONS
SPECIFICATIONS

TYPE IDENTIFICATION

ENGINE NUMBER
ENGINE NUMBER ① is carved on rear crankcase as Shown in figure.



Both FRAME NUBER AND ENGINE NUMBER are designed spe ng spare parts.

FUEL AND ENGINE OIL
Be sure to use specified fuel and engine oil.
Some specifications are as follows:

FUEL
Unleaded, the minimum octane number is 95 or more.

ENGINE OIL
For GENERIC SYSTEM, we recommend special engine oil, you can choose high quality Four-stroke engine oil (SHELL ULTRA 4 – 15W40)

GEAR OIL
Use high quality, all-purpose 80W90 engine oil for your vehicle.

BREAK-IN TIME
General requirements are as follows：

- Limit break-in speed：
  At the first **100KMS** mileage，play throttle less than **4/5 throttle**；
- Don’t run engine too long during break-in time, and try to change throttle position.

PRECAUTIONS AND GENERAL INSTRUCTIONS

- Correctly abide by the following items when disassembling and assembling scooter:
- Don't run engine indoors without ventilation;
- Be sure to replace new bushings, circlips, O-rings and cotter pins with new ones；

CAUTION

- It is forbidden to use the circlip removed from shaft again, only use new one；
- Be very carefull to install new circlip for fear that the end hatch of circlip exceeds required sliding surface for shaft；
- After installing circlip, inspect whether it has been completely clipped into the groove.

- Fix bigger diameter bolt first when tightening cylinder head or cylinder, and tighten to specified torque gradually from inside to outside at diagonal order.
- Use special tools for some special requirements；
- Use original components and recommended engine oil；
- Keep each other's safety when several persons do；
- Inspect looseness and operating state of components after reassembling them.；
- Take high care of gasoline, which is explosive, and never use gasoline as lotion.

The words like warning, notice, note may turn out incessantly in the manual, which means:

WARNING The personal safety of the rider may be involved. Disregarding the information could result in injury to the rider.
CAUTION These instructions point out special service procedures or precautions that must be followed to avoid damaging the machine.
NOTE it provides some special information, which keeps maintenance easier and important instructions clearer..

REPLACEMENT COMPONENTS

Be sure to use genuine GENERIC components or their equivalent.. Genuine GENERIC components are high quality parts which are designed specially for your vehicle.

CAUTION

Damage to the scooter may result from use of replacement components which are not Equivalent in quality to genuine GENERIC parts, and it can lead to performance problems.

SPECIFICATIONS

DIMENSION AND NET WEIGHT

OVERALL LENGTH	1770 mm
OVERALL WIDTH	702 mm
OVERALL HEIGHT	1085 mm
WHEELBASE	1280 mm
NET WEIGHT	100 kg

CHASSIS

Front shock absorber	spring, oil damp
Rear shock absorber	spring, oil damp
Front wheel	120/70-12
Rear wheel	130/70-12
Front brake	Discφ190
Rear brake	Drumφ110

ENGINE

Type	four-stroke, air cooled
Intake system	piston-reed valve
Cylinder QTY.	1
Bore	52.4mm
Stroke	57.8mm
Discharge	124.6ccm
Compression ratio	9.5:1
Air cleaner	dry
Starting system	electric and kicking start
Lubricating system	pressure lubricating

ELECTRIC

Ignition mode	CDI
Spark plug	CR7HSA
Storage battery	YTX7L-BS
Generator	AC magneto
Fuse	15A
Headlight	12V—35/35W
Turning light	12V/10W
Taillight	12V—21/5W

CAPACITY

FUEL TANK	5.2L
ENGINE OIL TANK	1L
GEAR OIL	0.1L

Transmission system

Clutch system	dry auto a centric
Gearshift mechanism	CVT stepless

Operating mode of gears shift mechanism

Automatic a centric

Step less shift range	0.86~2.64

***the above data may be modified without any notification.**

Periodic maintenance and service

CONTENTS

Periodic maintenance and service schedule
Maintenance and service procedures
Storage battery
Spark plug
Cylinder head nut and exhaust pipe bolt
Cylinder head and cylinder
Fuel level line
Air cleaner
Throttle cable
Engine idle speed
Oil pump
Gear oil
Braking
Tire
Steering
Front shock absorber
Rear shock absorber
Vehicle bolts and nuts

Periodic maintenance and service schedule

The following table lists all required intervals for maintenance and service，following which, you are assured to have your scooter perform in the best way.

Note

Do more frequent maintenance when often riding on bad road

Periodic maintenance table

PERIODICAL MAINTENANCE SCHEDULE

Item	Maintenance Kilometres / Check Items	500KM	3500KM	6500KM	9500KM	12500KM	15500KM	18500KM	21500KM	Remarks
1	Air cleaner element	I	C			R	C	R	C	
2	Air cleaner	I			C	R				
3	Tire pressure	I	I	I	I	I	I	I	I	
4	Battery	I	I	I	I	I	I	I	I	
5	Spark plug	I	I	I	I	R	I	R	I	
6	Carburettor (idle speed)	I			I		I		I	
7	Steering bearing and handles	I		I						
8	Transmission oil	R	Replace all 6000Km or once a year							
9	Engine oil	R	Replace all 3000km							
10	Drive belt		I		I	R		I	R	
11	Fuel tank switch and lines	I		I			I		I	
12	Throttle valve operation and cable	I	I	I	I	R	I	I	R	
13	Engine bolts and nuts	I		I			I		I	
14	piston	Replace all 12500Km								
15	Exhaust system				I					
16	Shock absorbers	I			I			I		
17	Front/rear suspension	I			I			I		
18	Main/side stand	I	L	L	I/L	L	L	I/L	L	
19	Brake mechanism/brake pads	I	I	I	I	I	I	I	I	
20	Bolts/nuts for each component	I	I			I			I	

The above maintenance schedule is established by taking the monthly 800 kilometers as a reference which ever comes first.

Have your motorcycle checked and adjusted periodically by your GENERIC Authorized Dealer to maintain the motorcycle at the optimum condition.

Code: I ~ Inspection, cleaning, and adjustment R ~ Replacement C ~ Cleaning (replaced if necessary) L ~ Lubrication

Remark: 1. Clean or replace the air cleaner element more often when the motorcycle is operated on dusty roads or in the Heavily- polluted environment.

Notes in the remarks are used to indicate the applicable models.

Maintenance and adjustment procedures

The section describes the servicing procedures for each item of the Periodic Maintenance requirements.

Storage battery

Inspect twice a year the contact. Clean if any corrosion.
Remove the battery and charge before you store the vehicle for long time.

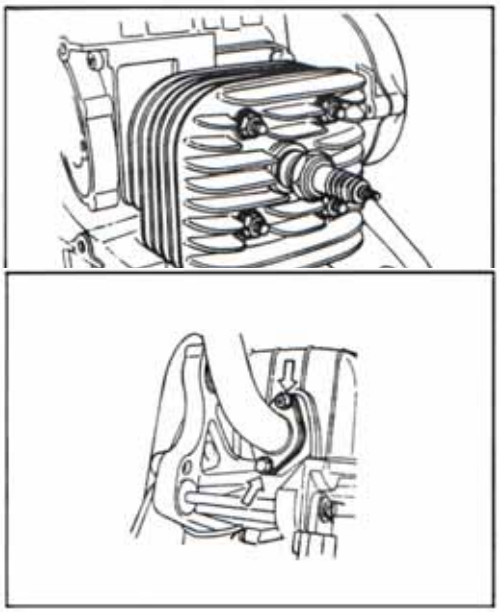
Uncover seat, and then remove the battery box cap in the
Middle of helmet barrel.

Disconnect negative pole line end, positive end, and then remove battery；

Measure the voltage between the two ends of battery with
voltage gauge，charge if the voltage is below 11,9V

Cylinder head nuts and exhaust pipe bolts

Tighten at each service.



If cylinder head nuts are not tightened to the specified torque, may re
in leakage of compressed fuel-air mixture and reduce output, tighten
cylinder head nuts in the following procedures:：

1. Remove the frame lower covers.
2. Remove the cylinder head cover bolt.
3. Remove spark plug cap.
4. Tighten the nuts evenly one by one to the their specified tor
Tighten the nuts in the order indicated.

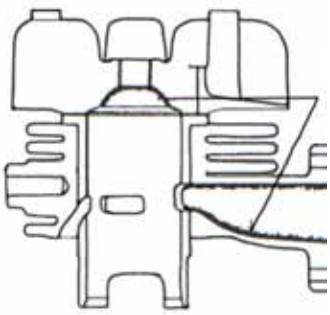
Tightening torque：

Cylinder head nut：15-18N.m

Exhaust pipe bolt：15-18N.m

Cylinder and cylinder head

Clean carbon every 6000 km

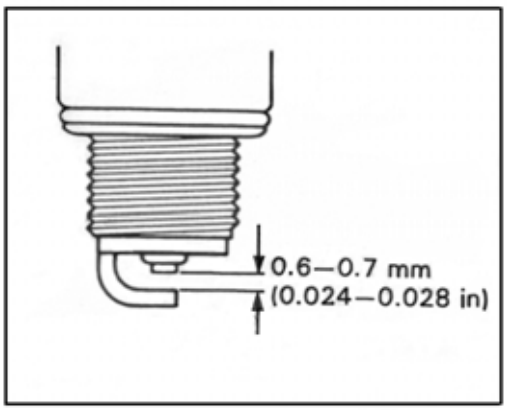


Carbon deposits in the combustion chamber and the cylinder head w
raise the compression ratio and may cause preignition and overheatin
Carbon deposited at the exhaust port of the cylinder will prevent the flo
of exhaust gases, reducing the output. Remove carbon depos
periodically.

SPARK PLUG

Neglecting the spark plug maintenance eventually leads to difficult starting and poor performance. If the spark plug is used for a long time, the electrode gradually burns away and carbon builds up along the inside part. In accordance with the periodic table, the plug should be removed for inspection, cleaning and to reset the gap.

- Carbon deposits on the spark plug will prevent good sparking a cause misfiring. Clean the deposits periodically.
- If the center electrode is fairly worn down, the plug should replaced and the plug gap set to the specified gap using a thickne gauge.



Thickness gauge

Spark plug gap：0.6-0.7 mm (0.024-0.028 inch)

Check the spark plug for burnt condition. If abnormal replace the spa plug as indicated in the chart.

NGK	TROCH	REMARKS
BPR7HS	E7RTC	Standard

- Tighten the spark plug to the specified torque.

Spark plug

Tightening torque:15-18N.m

NOTE:

- To check the spark plug, first make sure that the fuel used is unleaded gasoline, and if plug is either sooty with carbon or burnt white, replace it.
- Confirm the thread size and reach when replacing the plug.

FUEL LINE

Inspect at initially 500 km and every service, replace every 4 years.

AIR CLEANER

Clean every 3000KM

If the air cleaner is clogged with dust, intake resistance will, be increased with a resultant decrease in power output and an increase in fuel consumption. Check and clean the element in the following manner.

□ Remove screw 1 and screw 2，take down air cleaner

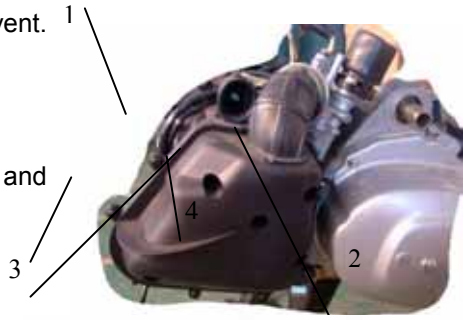
□ Unscrew tapping screw 3，remove air cleaner cap 4

□ Fill a washing pan of a proper size with Non-flammable cleaning solvent. Immerse the air Cleaner in the cleaning solvent and wash them clean.

□ Squeeze the cleaning solvent out of the washed element
By pressing it between the palms of both hands: do not twist
or wring the air cleaner filter core element or it will develop tears.，

□ Immerse cleaned filter core of air cleaner in CCI or CCI SUPER oil, and squeeze the oil out of the core，which may be slightly wet with oil.

□ Install air cleaner filter core in the reverse order of removal.



CAUTION：

◆ Before and during the cleaning operation, inspect the core for tears. A tore core must be replaced

◆ Be sure to position the filter core, so that no incoming air will bypass it. Remember, rapid wear of piston rings and cylinder bore is ofter caused by defective or poorly fitted filter core.

A Non-flammable cleaning solvent
Б CCI or CCI SUPER oil

THROTTLE CABLE

Adjust every 1000KM.

Loosen locknut，and adjust throttle cable play by turning adjuster in or out to obtain the following cable play. After adjusting the calbe play，tighten the locknut.

Cable play：0.5-1.0MM（0.02.-0.040 inch）

Engine idle speed

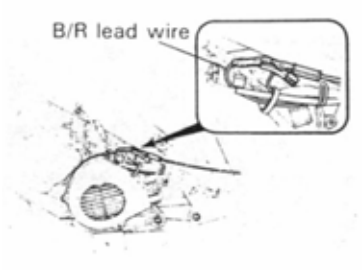
Adjust every 1000KM.

- Adjust the throttle cable play.
- warm up the engine.

Note：
Warm up engine for 10 minutes.

Connect an electric tachometer to the connecting protion of the magneto lead wire as shown in the illustration. Use the selector key “C’ position.

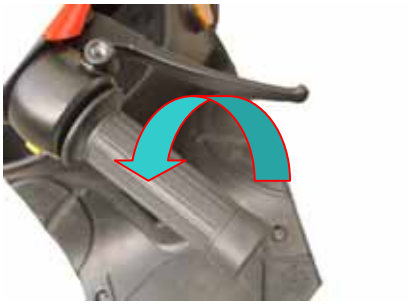
Tachometer



Adjust the throttle stop screw to obtain the idle r/min as follows:

Idle speed：1600±100r/min

Finally adjust the throttle cable play.



GEAR OIL

Change as shown in the service schedule.

Inspect gear oil periodically as follows:

The transmission oil level can not be checked. It must be replaced as listened in the manual.
0,11 L is required.

Tightening toque：9-15N.m
（0.9-1.5 kg-m ， 6.5-11.0 lb-ft）

BRAKES

Inspect at initially 500 km and every service, replace brake fluid every 2 years, replace brake hose every 4 years.

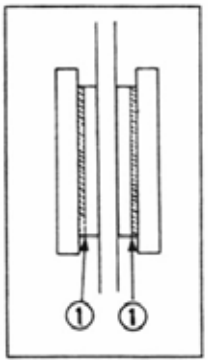
Front brake fluid level
Keep the scooter upright and place the handlebar staight.
Check brake fluid level by observing the lower limit line on the brake fluid reservoir.
When the level is below the lower limit line, replenish with brake fluid that meets the following specification.

Specification and classification：DOT4

WARNING：
The brake system of the scooter is filled with a glycol-based brake the lowest line
Fluid. Do not use or mix different types of fluid such as silicone-based and petroleum-based. Do not use any brake fluid taken from old, used or unsealed containers. Never reuse the brake fluid left over from the last servicing and stored for long periods.

WARNING：

Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses for cracks and hose joints for leakage before riding.



Brake pads

Wearing condition of brake pads can be checked by observing the limit line marked on the pad. When the wear exceeds the limit mark, replace the pads with new ones.

Bleeding air from the brake fluid circuit

Air trapped in the fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder and thus interferes with the full braking performance of the brake caliper. The presence of air is indicated by “sponginess” of the brake lever and also by lack of braking force. Considering the danger to which such trapped air exposes the machine and rider, it is essential that, after remounting the brake and restoring the brake system to the normal condition, the brake fluid circuit be purged of air in the following manner:

- Fill up the master cyliner reservoir to the upper end of the inspection window. Replace the reservoir cap to prevent entry of dirt.
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle.

□Bleed air from the bleeder valve.

Squeeze and release the brake level several times in rapid succession. And squeeze the lever fully without releasing it. loosen the bleeder valve by turning it a quarter of a turn so that the brake fluid runs into the receptacles: the will remove the tension of the brake lever causing it to touch the handlebar grip. Then, close the valve, pump and squeeze the lever, and open the valve. Repeat the process until the fluid flowing into the receptacle no longer contains air bubbles.

NOTE：when bleeding the braking system, replenish the brake fluid reservoir if necessary. Make sure that there is always some fluid visible in the reservoir.

Close the bleeder valve, disconnect the pipe. Fill the reservoir with brake fluid to the upper end of the inspection window.

BLEEDER VALVE
TIGHTENING TORQUE: 6-9N.m(0.6-0.9kg-m,4.5-6.5lb-ft)

CAUTION：
Handle brake fluid with care: the fluid reacts chemically with p

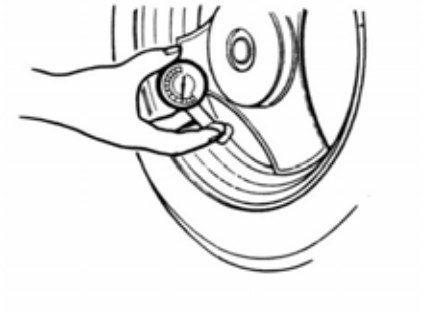
Rear brake
Turn adjusting nut so that the the play of the brake lever is 15-

Brake shoe wear：
The vehicle is equipped with the brake lining limit Indicator on the rear brake.
Inspect brake lining limit as follows：

1. First check if the brake system is properly adjusted.
2. when operating the brake, check to see that the tip of indicator is within the range.
3. if the tip of indicator is beyond the range, the brake shoe assembly should be raplaced with anew set of shoe.

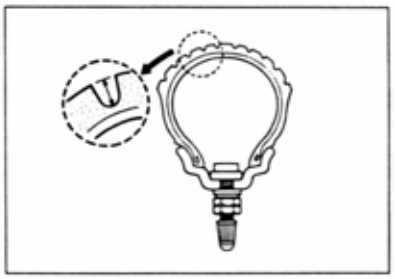
Tire

Inspect at initially 500km and every 2500km thereafter



Tire pressure：
If the pressure is too high, the scooter will tend to rede stiffly and have poor traction. Conversely, if tire pressure is too low, stability will be adversely affected. Thereafter, maintain the correct tire pressure for good roadability and to prolong tire life.

CAUTION：
The standard air pressure of tires is 2Bar, the use of other than standard may cause handling instability.



Tire tread condition：
It is highly recommended to replace the tire when the remaining depth of tire tread reaches the following specification.
Front and rear：1.6MM（0.064IN）
Tire depth gauge

Steering

inspect at initially 500km and every service.

Steering should be adjusted properly for smooth turning of handlebars and safe running. Too stiff steering prevents smooth turning of handlebars and too loose steering will cause poor stability.
Check that there is no play in the front fork assembly by supporting the machine so that the front wheel is off the ground, with wheel staight ahead, grasp lower shock absorber near the axle and pull forward. If play is found, perform steering bearing adjustment.

Front shock absorber

Adjust at initially 500km and each service.

Inspect the front shock absorber for oil leakage or other damage, and replace the defective parts, if necessary.

IMPORTANT:
If the front fork is too weak us 60 – 70 ml (depends on the weight of the driver) of W15 fork oil to improve the damping.

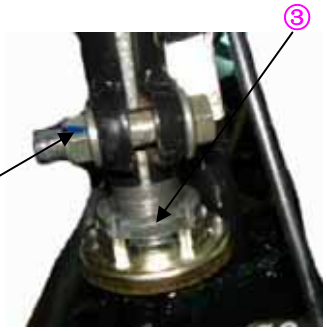
Rear shock absorber

Adjust at initially 500km and each service.

Inspect front shock absorber for oil leakage and other damage, and replace the defective parts if necessary.

No.	Item	N•m	Kg-m
1	Front axle nut	55-60	5.5-6
2	Handle tightenging nut	37-44	3.7-4.4
3	Steering sterm locknut	37-44	3.7-4.4
4	Disc brake caliper fixing bolt	22-29	2.2-2.9
5	Disc brake master cylinder hose fixing bolt	22-29	2.2-2.9
6	Disc brake fixing bolt	5-9	0.5-0.9
7	Front shock absorber fixing bolt	37-44	3.7-4.4
8	Engine pivot fixing nut	55-60	5.5-6
9	Engine bracket fixing nut	37-44	3.7-4.4
10	Rear wheel fixing nut	100-130	10-13
11	Rear brake rocker arm fixing bolt	5-9	0.5-0.9
12	Rear shock absorber under fixing bolt	22-29	2.2-2.9
13	Start pedal mounting screw	15-20	1.5-2
14	Rear shock absorber top fixing bolt	37-44	3.7-4.4

①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LUBRICATION

Proper lubrication is important for smooth operation and long life of each working part of the scooter. The major lubrication points are indicated below：

NOTE：

1. Lubricate exposed parts which are subject to ruse with engine oil.
2. Before lubricating each part, clean off any rusty spots and wipe off any grease, oil dirt of grime.

WARNING：Be careful not to apply too much grease to the rear brake camshaft, otherwise brake slippage will result from the presence of grease in brake drum.

steering stem bearing
front wheel bearing
engine bracket
rear brake camshaft
side stand
rear brake shaft and rear brake cable
speedometer cable and gear box
main stand

AA: lubrication

ENGINE

CONTENS

Engine components removal with the engine in place
Engine removal and remounting
Engine removal
Engine remounting
Engine disassembly
Engine components inspection and servicing
Bearings
Oil seals
crankshaft
automatic clutch inspection
cylinder head
cylinder
piston
reed valve
engine remounting
oil seals
bearings
bushings
crankshaft
crankcase
rear axle shaft
transmission
starter pinion and starter gear
Movable driven and clutch
Movable drive
Kicking starter
Piston
Oil pump and oil pump driven gear
Intake pipe
Magneto

Engine components removable with the engine in place

The parts listed below can be removed and reinstalled without removing the engine from the frame.

Engine left side

Kicking starter lever
Clutch brake pad kit
Driver left face
V-belt
Driver belt right face
Electric starter gear
Super clutch
Driven face

Engine center

Carburetor
Intake pipe
Reed valve
Oil pump
Worm wheel
Cylinder head
Cylinder
Piston

Engine right side

cooling fan
Magneto
Starter motor

TORQUE VALUES

STANDARD

● 5 mm bolt and nut	5 N.m (3.5 lbf.ft)
● 6 mm bolt and nut	10 N.m (7.2 lbf.ft)
● 8 mm bolt and nut	22 N.m (16 lbf.ft)
●10 mm bolt and nut	35 N.m (25 lbf.ft)
●12 mm bolt and nut	55 N.m (40 lbf.ft)

ENGINE

● Cylinder head nut	28 N.m (20.7 lbf.ft)
● Spark plug	12 N.m (8.9 lbf.ft)
● Cylinder head bolt	20 N.m (14.8 lbf.ft)
● Alternator bolt	8 N.m (5.9 lbf.ft)

FRAME

● Handlebar upper holder bolt	24 N.m (17.7 lbf.ft)
● Throttle housing cover screw	4 N.m (2.9 lbf.ft)
● Steering shaft nut	50 N.m (36.9 lbf.ft)
● Steering shaft holder bolt	33 N.m (24 lbf.ft)
● Wheel rim bolt	18 N.m (13.3 lbf.ft)
● Tie rod lock nut	35 N.m (25.8 lbf.ft)
● King pin nut	40 N.m (29 lbf.ft)
● Handlebar lower holder nut	40 N.m (29.5 lbf.ft)
● Front wheel bolt	24 N.m (17.7 lbf.ft)
● Front axle castle nut	40-60 N.m (30-45 lbf.ft)
● Front brake arm nut	4 N.m (3.0 lbf.ft)
● Rear brake arm nut	7 N.m (5.2 lbf.ft)
● Rear axle castle nut	40-60 N.m (30-45 lbf.ft)
● Rear wheel bolt	24 N.m (17.7 lbf.ft)
● Exhaust muffler mounting bolt	30 N.m (22.1 lbf.ft)
● Engine hanger bolt	30 N.m (22 lbf.ft)
● Rear axle holder bolt	90 N.m (65 lbf.ft)
● Swing arm pivot nut	90 N.m (65 lbf.ft)
● Rear shock absorber mounting nut	45 N.m (33 lbf.ft)

CYLINDER HEAD / VALVES

SERVICE INFORMATION CYLINDER HEAD REMOVAL
TROUBLESHOOTING CYLINDER HEAD INSTALLATION
CAMSHAFT COMPOSITION REMOVAL

SERVICE INFORMATION

GENERAL

This section describes cylinder head, valves, camshaft and the other parts maintenance. The engine must be removed from the frame to service cylinder head. Camshaft lubrication oil is fed to the cylinder head through an oil orifice in the engine case. Before installing the cylinder head be sure the orifice is not clogged and the gasket, O-ring and dowel pins are in place.

SPECIFICATIONS

ITEM		STANDARD	SERVICE LIMIT
CYLINDER COMPRESSION		12±0.5 kg/cm^2	--------
CAM LOBE HEIGHT	IN	29.795	29.395
	EX	29.560	29.160
ROCKER ARM I.D.		10.000-10.018	10.10
ROCKER ARM SHAFT O.D.		9.972-9.987	9.91
CYLINDER HEAD WARPAGE		--------	0.05
VALVE SPRING FREE LENGTH	IN	32.3	31.2
	OUT	35.0	34.1
VALVE STEM O.D.	IN	4.975-4.990	4.90
	EX	4.955-4.970	4.90
VALVE GUIDE I.D.	IN/EX	5.000-5.012	5.30
STEM-TO-GUIDE CLEARANCE	IN	0.010-0.037	0.08
	EX	0.030-0.057	0.10
VALVE SEAT WIDTH	IN	1.0	1.8
	EX	1.0	1.8

TORQUE VALUES

Cylinder head bolts	8 ~ 12 n-m (0.8 ~ 1.2 kg-m)
Camshaft holder flange nuts	20 ~ 24 n-m (2.0 ~ 2.4 kg-m)
Tappet adjusting nut	9 ~ 12 n-m (0.9 ~ 1.2 kg-m)

TROUBLE SHOOTING

Engine top-end problems usually affect engine performance. These problems can be diagnosed by a compression test, or by tracing engine noise to the top end with a sounding rod or stethoscope.

LOW COMPRESSION

Valve

- **Incorrect valve adjustment**
- **Worn or damaged valve seats**
- **Burned or bent valve**
- **Incorrect valve timing**
- **Weak valve spring**

Cylinder head

- **Leaking or damaged head gasket**
- **Warped or cracked cylinder head**
- **Faulty cylinder or piston**

Excessive noise

- **Incorrect valve adjustment**
- **Sticking valve or broken valve spring**
- **Worn or damaged rocker arm or camshaft**
- **Worn or damaged cam chain**
- **Worn or damaged cam chain tensioner**
- **Worn cam sprocket teeth**

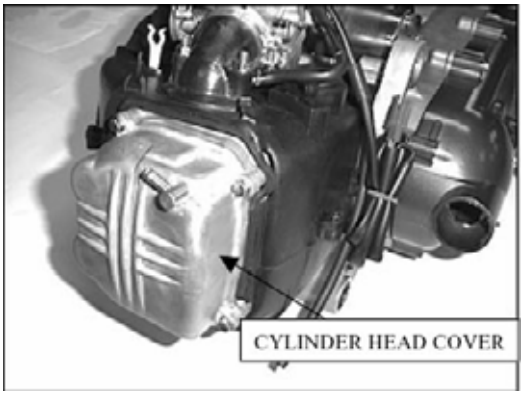
Excessive smoke

- **Damaged valve stem seal**
- **Faulty cylinder or piston rings**

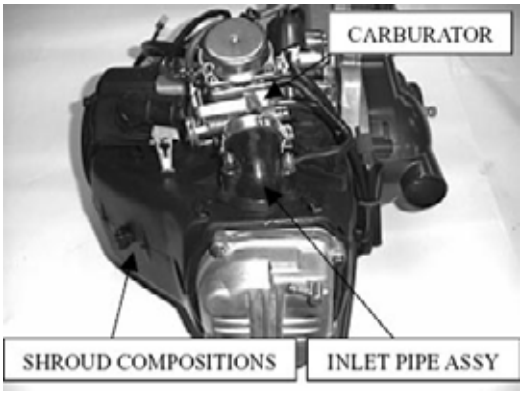
CAMSHAFT COMPOSITION REMOVAL

Remove the rubber tube of gas waste recovery.

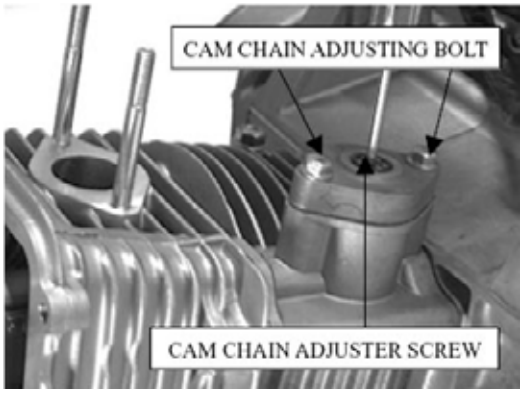
Remove the cylinder head cover.



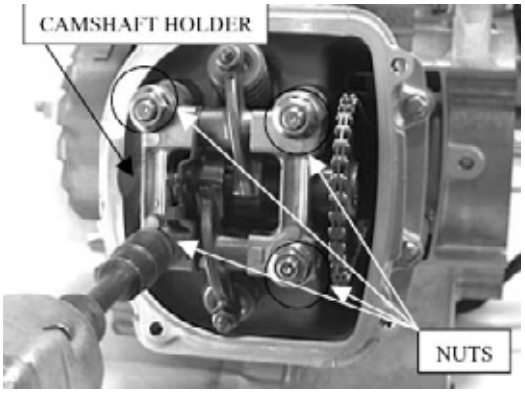
Remove the air cleaner and carburetor.
Remove the inlet pipe assy.
Remove the shroud compositions.



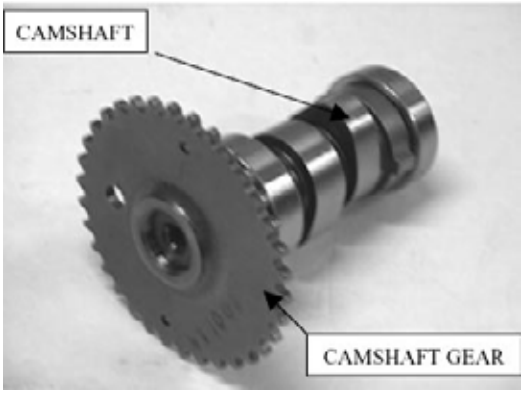
Relax the cam chain adjuster screw.
Remove the screw and O-ring and tighten the cam chain adjusting bolt with clockwise direction.



Remove the nuts and washers.
Remove the camshaft holder and dowel pins.

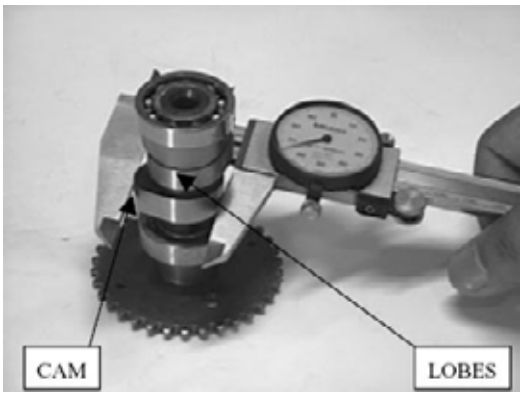


Relax the camshaft gear from cam chain and remove the camshaft.



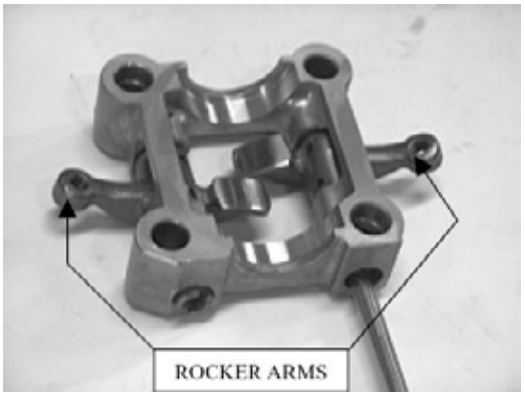
INSPECTION

Inspect the cam lobes surface and height of cam lobes for wear or damage.

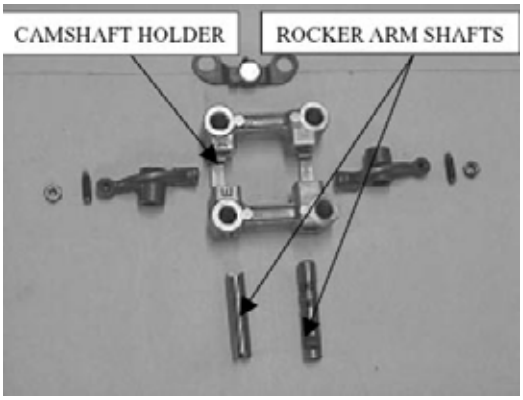


Inspect the camshaft and bearings for wear or damage and replace them if necessary.

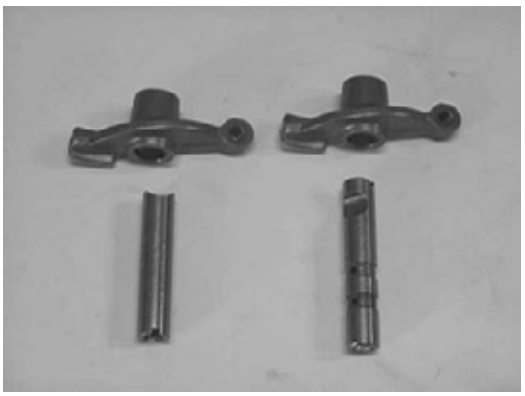
Screw a 5mm bolt into the rocker arm shaft threaded end. Pull on the bolt to remove the shafts and rocker arms.



Inspect the camshaft holder, rocker arms and rocker arm shafts for wear or damage.

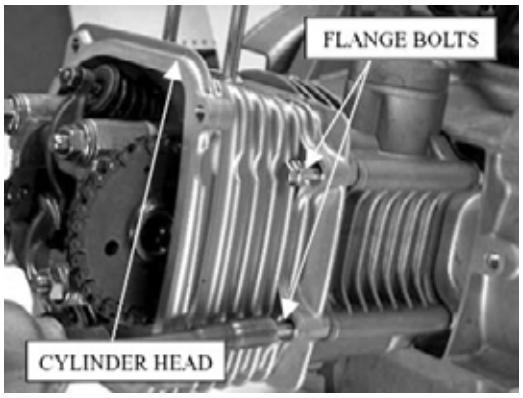


Measure the I.D. of each rocker arm.
SERVICE LIMIT: 10.10 mm
Measure the O.D. of each rocker arm shaft.
SERVICE LIMIT: 9.91 mm

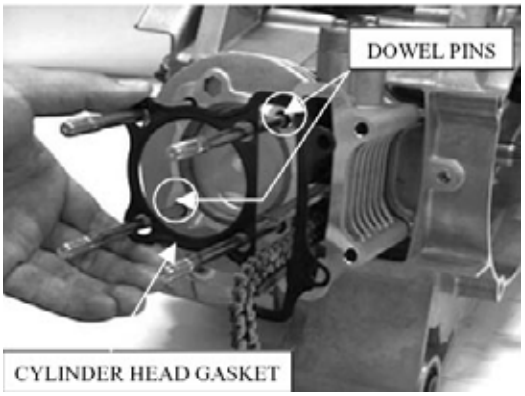


CYLINDER HEAD REMOVAL

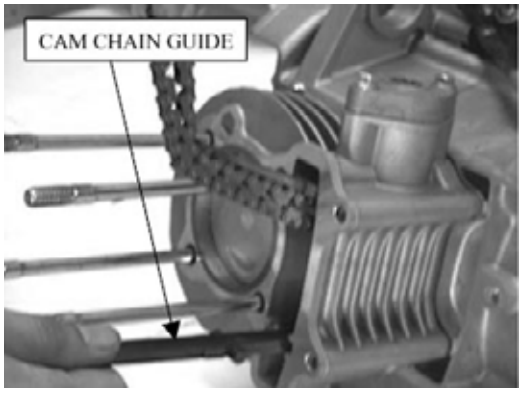
Remove the flange bolts and cylinder head.



Remove the cylinder head gasket and dowel pins.



Remove the cam chain guide.

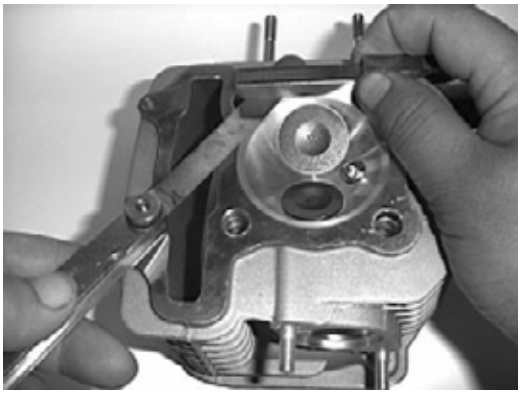


CYLINDER HEAD DISASSEMBLY

Remove the valve cotters, spring retainers and valve springs with a valve spring compressor.

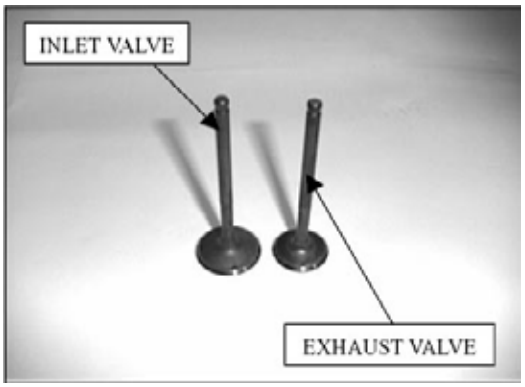
INSPECTION

Clean off all carbon deposits from the combustion chamber.
Check the spark plug hole and valve area for cracks.



Measure the cylinder head diagonally for warpage with a straight edge and feeler gauge.
SERVICE LIMIT: <u>0.05 mm</u>

Inspect each valve for turning, burning, scratches or abnormal stems wear.



Check the valve movement in the guide.
Measure and record each valve stem O.D.
SERVICE LIMITS: 4.90 mm

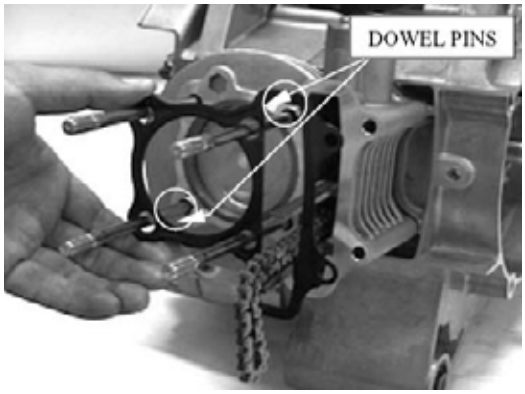
Measure and record the valve guide I.D.
SERVICE LIMITS: IN / EX 5.30 mm
Calculate the stem-to-guide clearance.
SERVICE LIMITS: IN 0.08 mm
EX 0.10 mm
NOTE: If the stem-to-guide clearance exceeds the service limits, determine if a new guide with standard dimensions would bring the clearance within tolerance. If so, replace guides as necessary and ream to fit. If the valve guide is replaced, the valve guide is replaced; the valve seat must be refaced.

CYLINDER HEAD ASSEMBLY

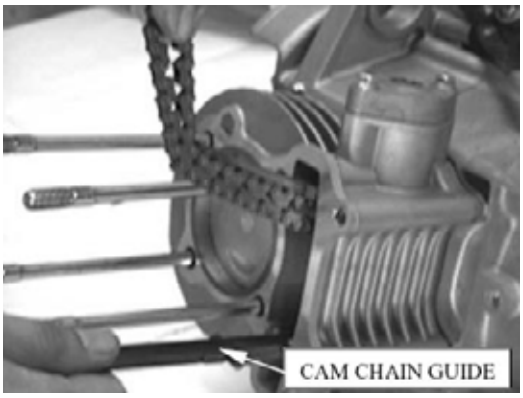
Lubricate each valve stem with oil.
Insert the valves into guides.
Install the valve springs, retainers and the cotters.
NOTE: To prevent loss of tension, don't compress the valve springs more than necessary.

INSTALLATION

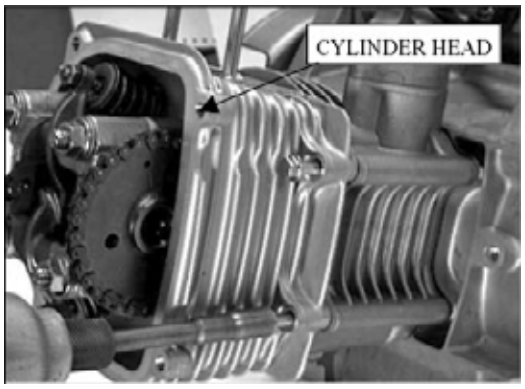
Install the new gasket and dowel pins.



Install the cam chain guide.

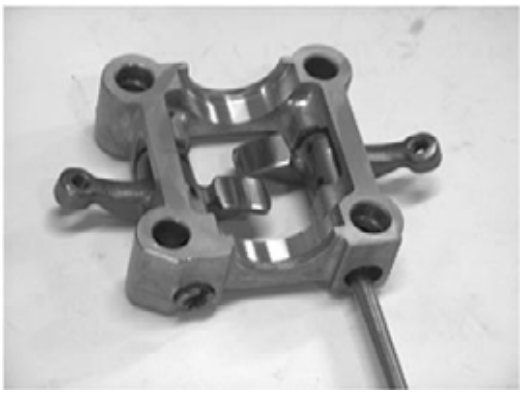


Install the cylinder head.

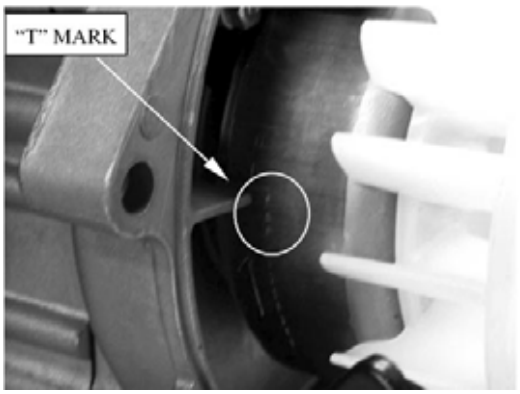


CAMSHAFT COMPOSITION INSTALLATION

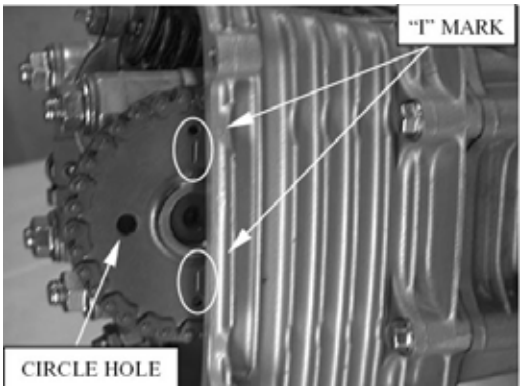
Install the rocker arms and rocker arm shafts into the camshaft holder.



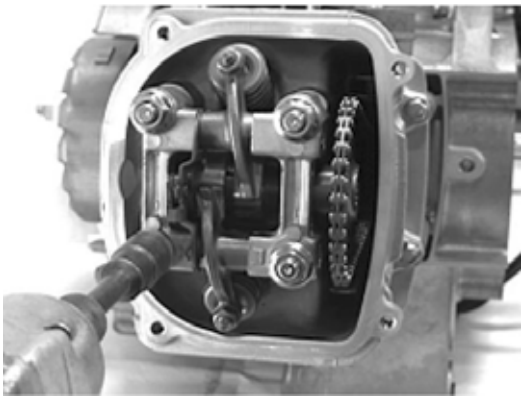
Align the "T" mark on the flywheel with the index mark on the alternator cover by turning the flywheel counter - clockwise.



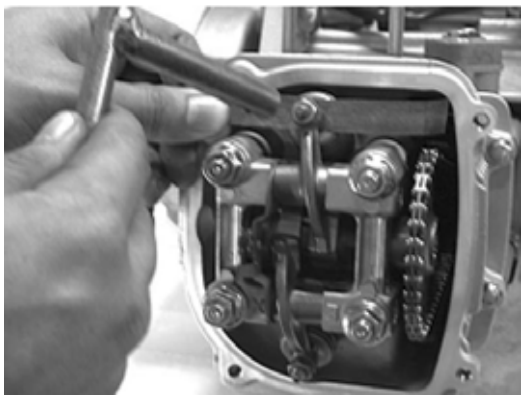
Position the camshaft gear with cam chain so that its "I" mark aligns with the cylinder head surface and the circle hole forwards front.



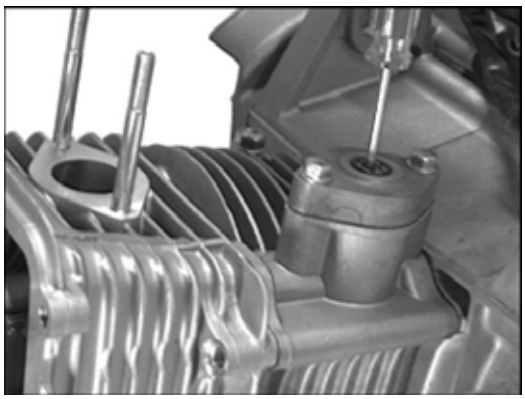
Install the dowel pins and camshaft holder.
Tighten the washers and nuts.
TORQUE: 20 n-m (2.0 kg-m)



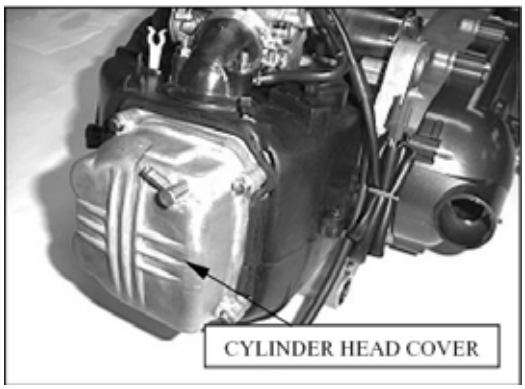
Adjust the clearance between the rocker arm and valve stem by applying a feeler gauge.
STANDARD VALVE: 0.08 mm



Relax the cam chain-adjusting bolt with counterclockwise direction and install the o-ring and screw.



Install the cylinder head cover.



CYLINDER / PISTON

SERVICE INFORMATION	PISTON REMOVAL
TROUBLESHOOTING	PISTON INSTALLATION
CYLINDER REMOVAL	CYLINDER INSTALLATION

SERVICE INFORMATION

GENERAL

Camshaft lubrication oil is fed to the cylinder head through an oil orifice in the cylinder head and engine case. Before installing the cylinder head make sure the orifice is not clogged and the gasket, O-ring and dowel pins are in place.

ITEM		STANDARD	SERVICE LIMIT	
Cylinder	I.D.	57.400 - 57.410	57.50	
	TAPER		----------	0.10
	OUT OF ROUND		----------	0.10
	WARPAGE ACROSS TOP		----------	0.10
Piston Piston pin Piston rings	PISTON O.D.	57.3075 - 57.3095	56.500	
	PISTON PIN BORE		15.002 - 15.008	15.04
	PISTON PIN O.D.		14.994 – 15.000	14.960
	PISTON-TO-PIN CLEARANCE		0.002 – 0.014	0.02
	PISTON-TO-PIN CLEARANCE	TOP	0.015 – 0.050	0.12
	PISTON RING-TO-RING GROOVE CLEARANCE	SECOND	0.015 – 0.050	0.12
		TOP/SEC	0.10 – 0.25	0.5
	PISTON RING END GAP	OIL	0.2 –0.7	----------
CYLINDER-TO-PISTON CLEARANCE		0.0005 – 0.1025	0.1	
CONNECTING ROD SMALL END I.D.		15.010 – 15.028	15.06	

TROUBLESHOOTING

Low or unstable compression

Worn cylinder or piston rings.

Overheating

Excessive carbon build-up on piston or combustion chamber wall.

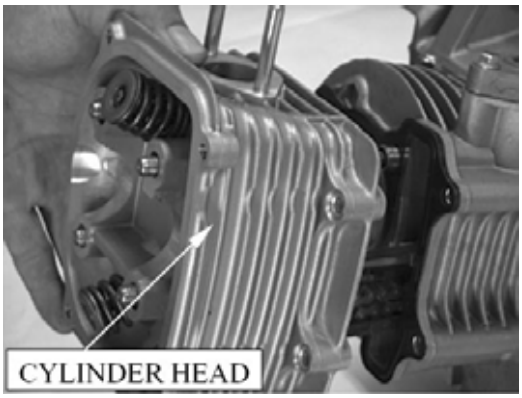
Knocking or abnormal noise

Worn piston and cylinder.
Excessive carbon build-up.

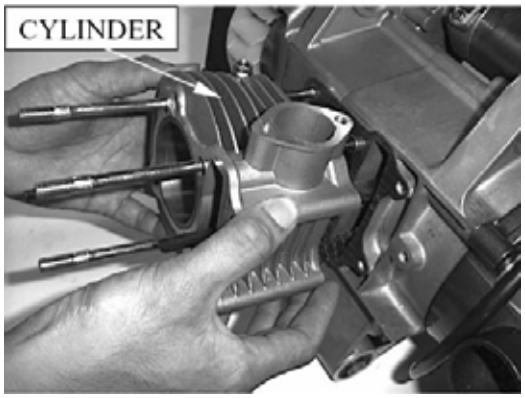
Excessive smoke

Worn cylinder, piston, or piston rings.
Improper installation of piston rings.
Scored or scratched piston or cylinder wall.
Damaged valve stem seal.

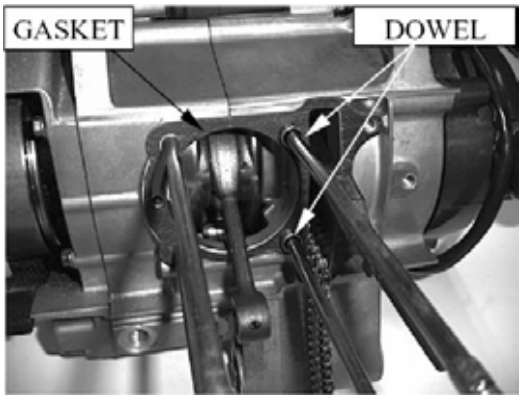
CYLINDER REMOVAL
Remove the cylinder head.



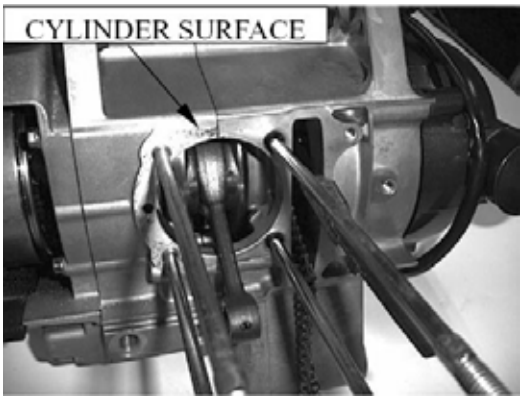
Remove the cylinder.



Remove the cylinder gasket and dowel pins.

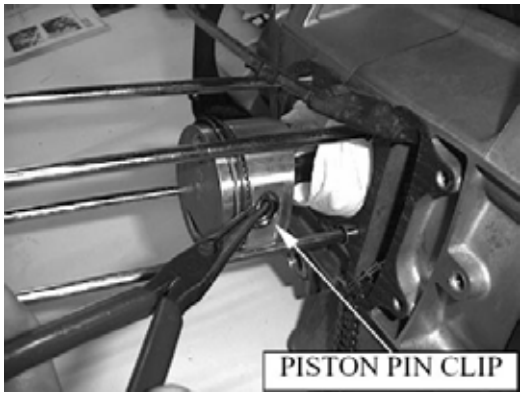


Clean off any gasket materials from the cylinder surface.
NOTE: <u>Be careful not to damage the gasket surface.</u>

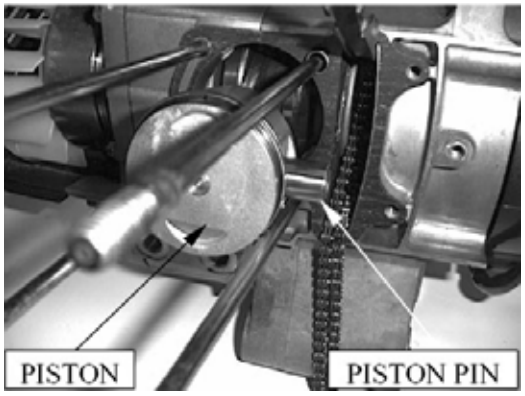


PISTON REMOVAL

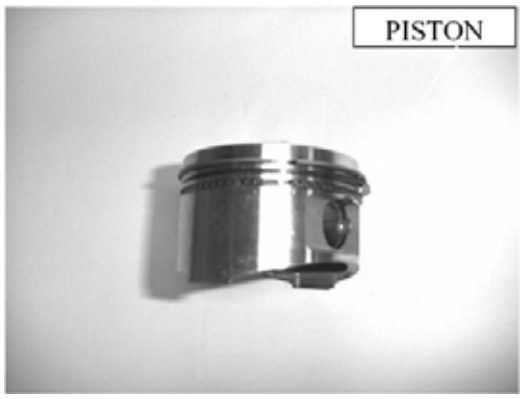
Stuff a shop towel into the crankcase.
Remove the piston pin clip with needle nose pliers.
NOTE: Do not allow the clip fall into the crankcase.



Remove the piston pin from the piston.
Remove the piston.

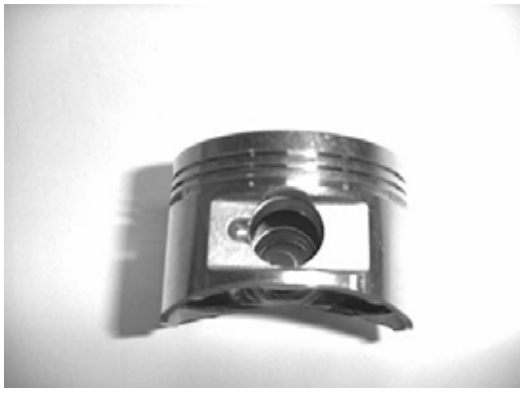


Spread each piston ring and remove it by lifting up at a point opposite the gap.

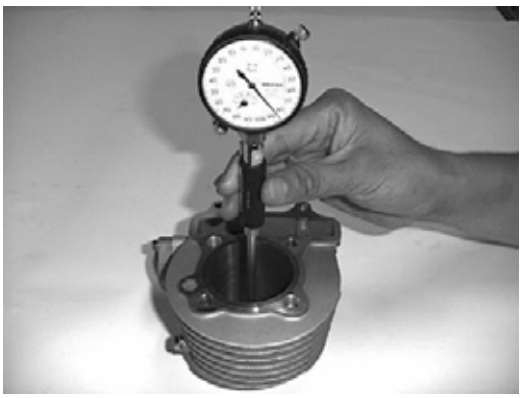


INSPECTION

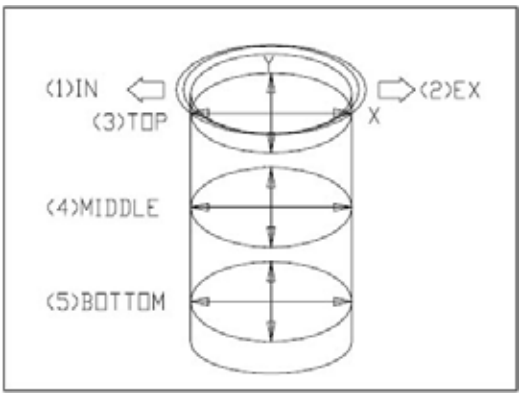
Inspect the cylinder walls for scratches or wear.



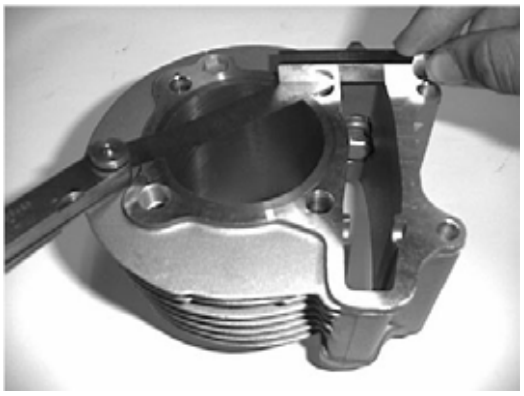
Measure and record the cylinder I.D. at three levels in both an X and Y-axis. Take the maximum reading to determine the cylinder wear.
SERVICE LIMIT: 57.50 mm
Calculate the piston-to-cylinder clearance.
Take the maximum reading to determine the clearance.
SERVICE LIMIT: 0.10 mm



Calculate cylinder taper at three levels in an X and Y-axis. Take the maximum reading to determine the taper.
SERVICE LIMIT: 0.10 mm
Calculate the cylinder out-of-round at three levels in an X and Y-axis. Take the maximum reading to determine the out-of –round.
SERVICE LIMIT: 0.10 mm



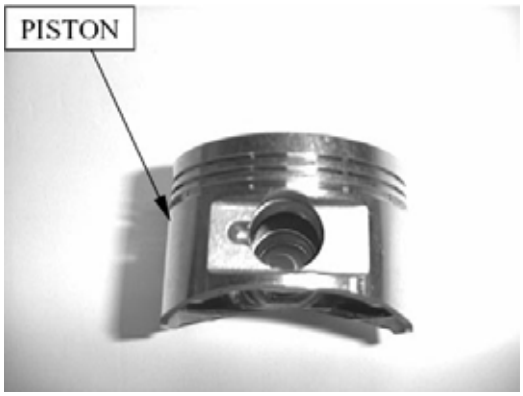
Inspect the top of the cylinder for warpage.
SERVICE LIMIT: 0.10 mm



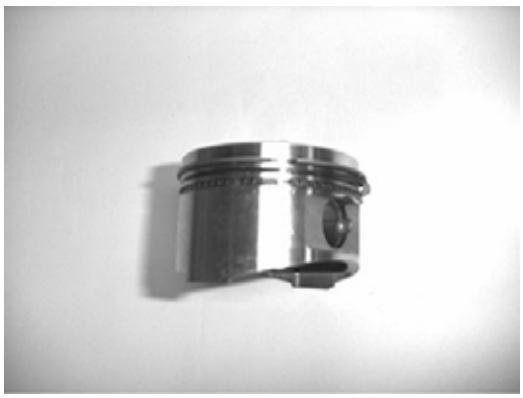
PISTON / PISTON RING INSPECTION

Measure the piston ring-to-groove clearance.
SERVICE LIMITS: TOP 0.12 mm
SECOND 0.12 mm

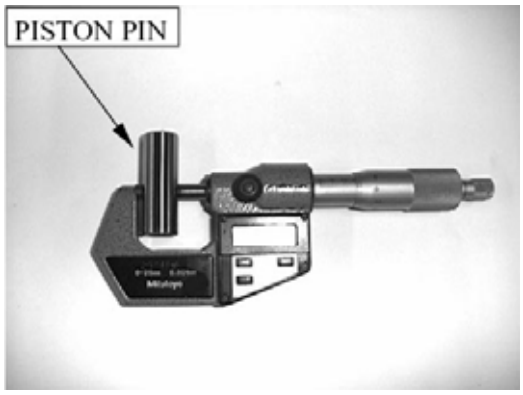
Inspect the piston for wear or damage.



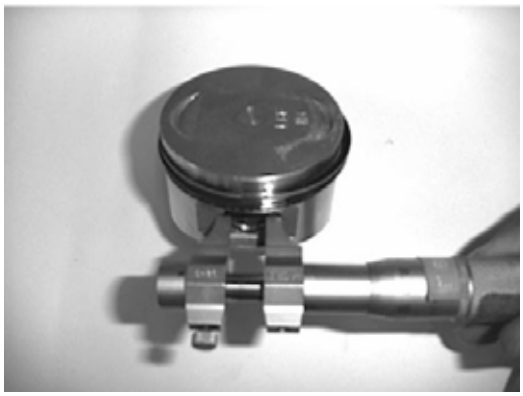
Insert each piston ring into the cylinder and measure the ring end gap.
NOTE: Push the rings into the cylinder with the top of the piston to be sure they are squarely set in the cylinder.
SERVICE LIMITS: TOP 0.5 mm
SECOND 0.5 mm



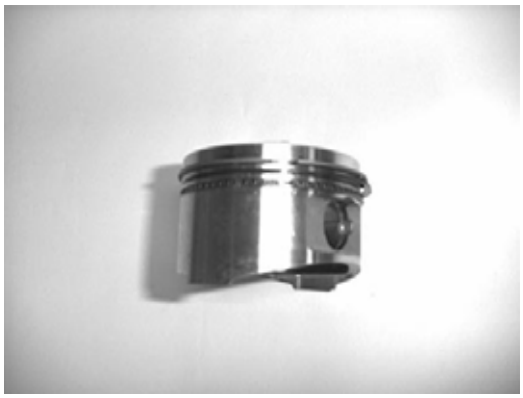
Measure the piston pin O.D.
SERVICE LIMIT: 14.960 mm



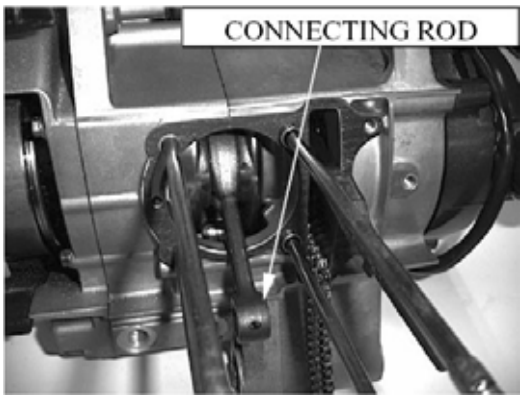
Measure the piston pin bore.
SERVICE LIMIT: 15.04 mm



Calculate the piston-to-piston pin clearance.
SERVICE LIMIT: 0.02 mm



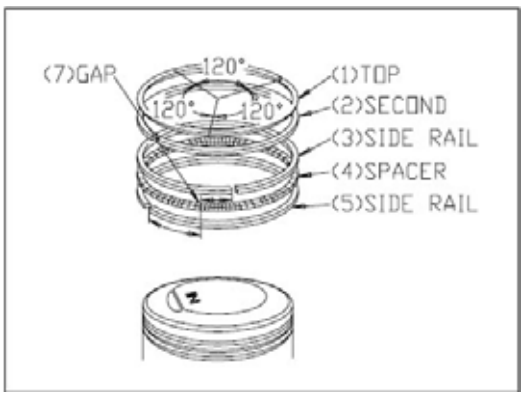
Measure the connecting rod small end I.D.
SERVICE LIMIT: 15.06 mm



PISTON INSTALLTION
PISTON RING INSTALLATION

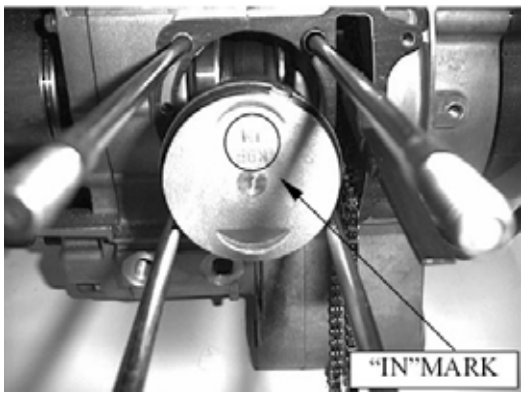
Clean the piston ring grooves thoroughly and install the piston rings with the marks facing up.
NOTE: Don't interchange the top and second rings. Avoid piston and piston ring damage during installation.

Space the piston ring end gaps 120 degrees apart.

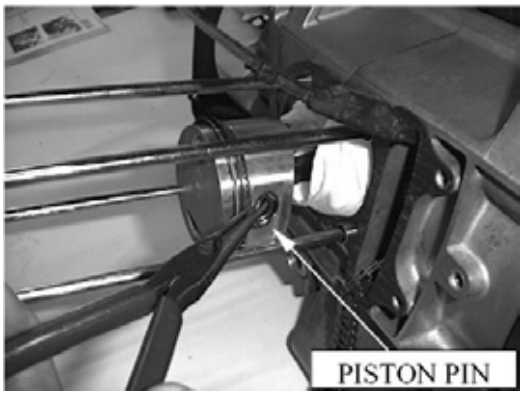


PISTON INSTALLATION

Install the piston with it's "IN" mark on the intake valve side.

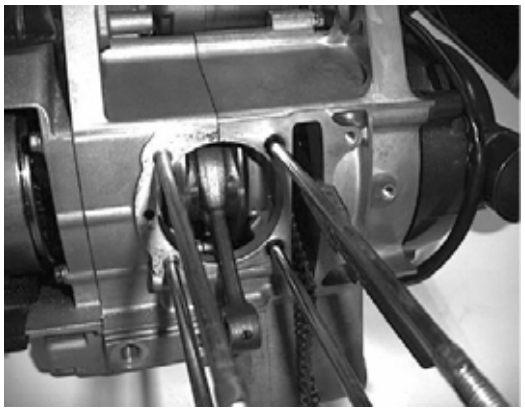


Install the piston pin with new pin clips.
Do not align the piston pin clip end gap with the piston cutout.
NOTE: Do not allow the clip to fall into the crankcase.

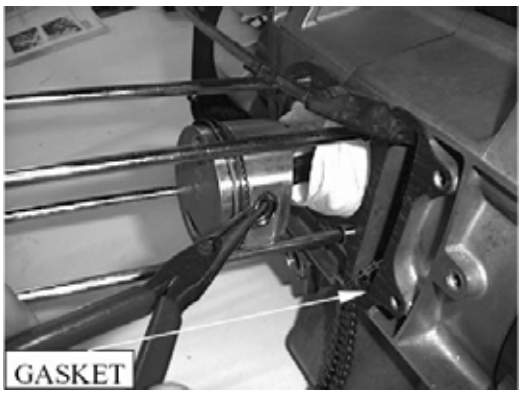


CYLINDER INSTALLATION

Clean any gasket material from the crankcase surface.
NOTE: Be careful not to damage the gasket surface.

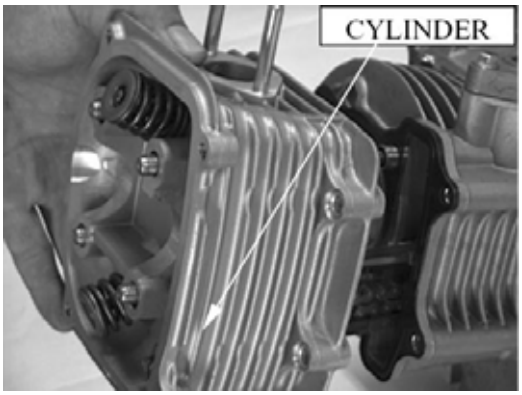


Install the dowel pins and a new gasket.



Coat the cylinder bore and piston rings with engine oil and install the cylinder.
<u>NOTE: Avoid piston rings damage cylinder bore during installation. Do not allow the cam chain fall into the crankcase.</u>

Install the cylinder head.



CHAPTER 4 FUEL AND LUBRICATION SYSTEM

CONTENTS

FUEL SWITCH

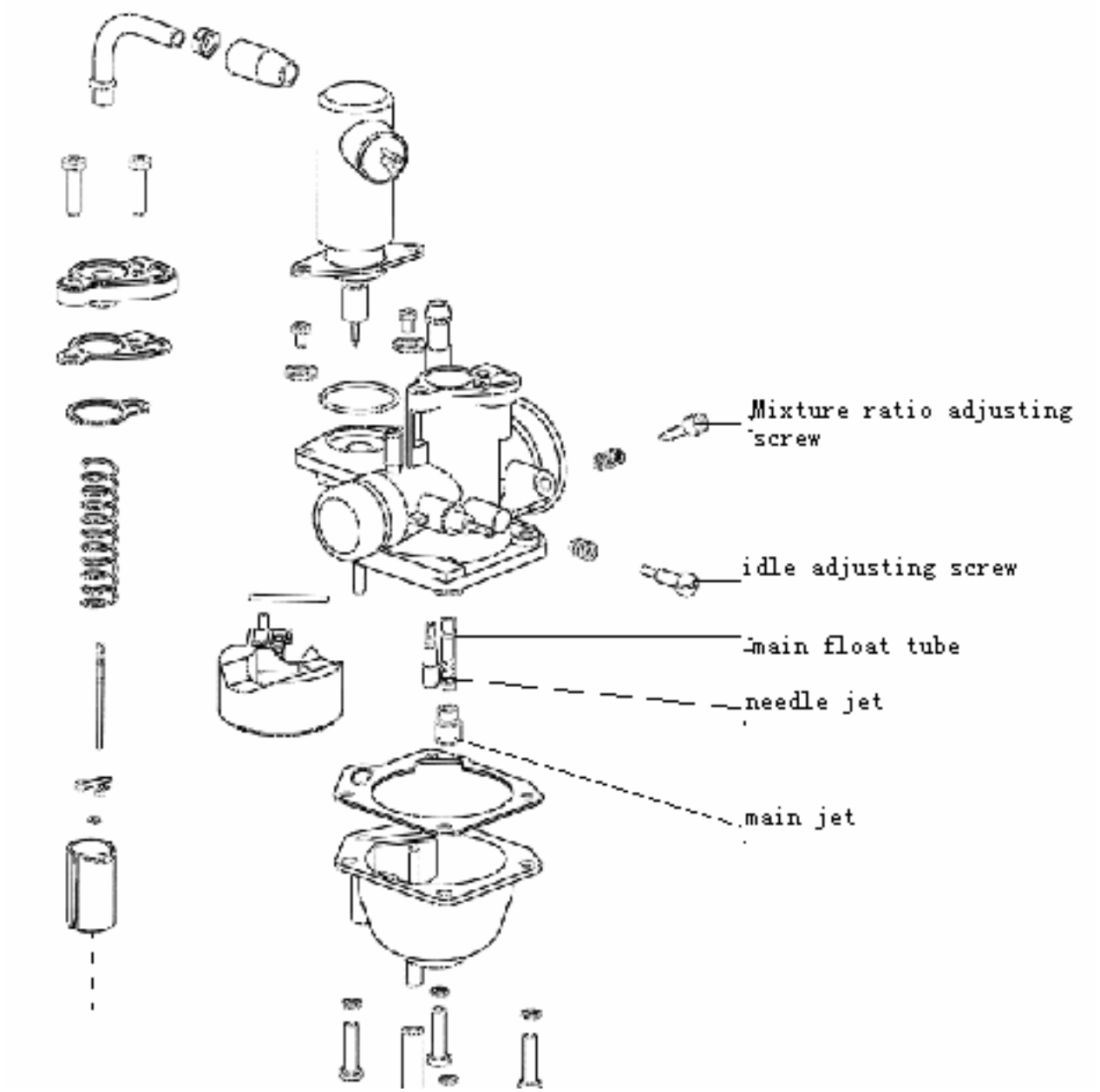
CARBURETOR

FUEL SWITCH

When the engine has started, a negative pressure (vacuum) is generated at the intake port. The negative pressure acts upon the diaphragm of the fuel switch and it pressed down the spring which supports the diaphragm so that the fuel passageway is opened and fuel is fed to the carburetor.

When the engine has stopped, the spring presses the valve, the fuel passageway is closed, and no fuel flows to the engine.

CARBURETOR

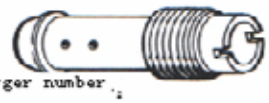
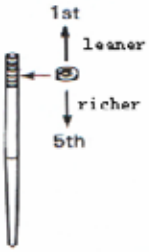


CARBURETOR	Carburetor manufacturer/type Identification code Main jet size Idle needle jet size Idle air adjusting screw Float height	 Corundum or QJ PD24J #158 #37,5 extrude 1 $\frac{1}{2} \pm \frac{1}{2}$ turnout 17±1mm

CARBURETION

Proper carburetion is determined according to the results of various tests, mainly concerning engine poer, fuel consumption and cooling effect of feul on engine, and jet settings ard made so as to satisfy and balance all of these conditions. Therefore, the jet should not be replaced with a size other than the original. And the positions of adjustable parts should not be changed except when compensation for the mixture ratio due to altitude differences or other climatic conditions. When adjustment is necessary, refer to the following.

fuel-air mixture ratio can be changed as follows:

throttle opening	means of changin ratio
slight	pilot jet  larger number richer mixture smaller number leaner mixture
medium	jet needle 
height	main jet larger number richer mixture: smaller number lean mixture

CHAPTER 5 ELECTRICAL SYSTEM

CONTENS

IGNITION SYSTEM

CHARGING AND LIGHTING SYSTEM

STARTER SYSTEM

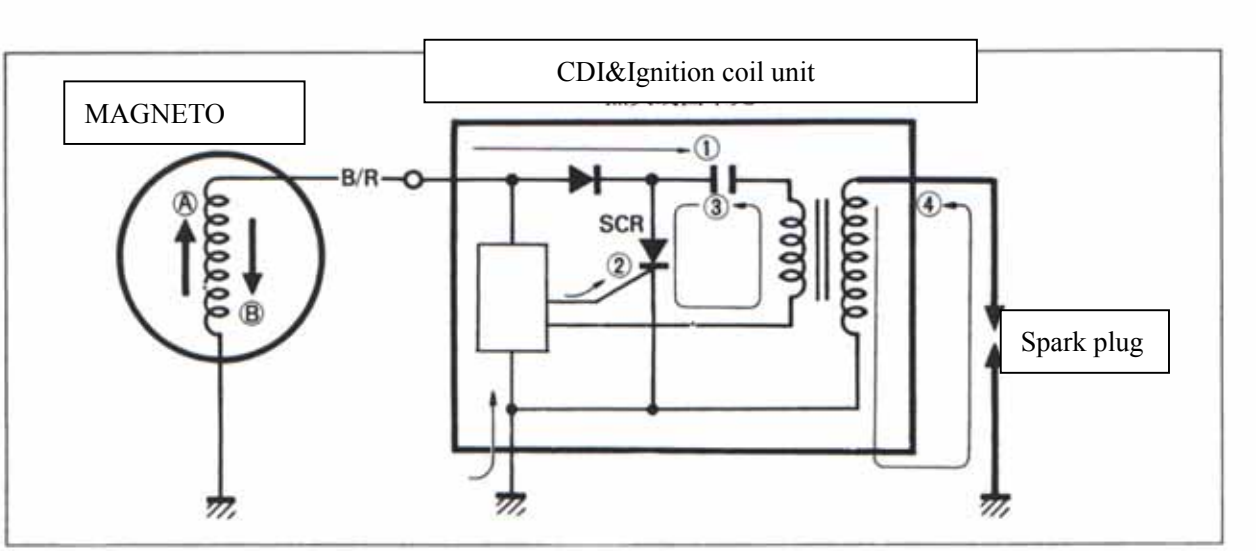
FUEL GAUGE

OIL LEVEL CHECK LIGHT AND TURN SIGNAL INDICATOR

SWITCHS

BATTERY

IGNITION SYSTEM



The ignition system consists of a flywheel magneto, a CDI&Ignition coil unit and a spark plug.

As the rotor tatates, an AC current is induced in the coil. Then current induced in the ○,A direction charges up the capacitor.

As the rotor rotates further, the current is induced in the reverse direction (dirction○,B). the current causes a voltage applied through the ground to the gate of SCR.

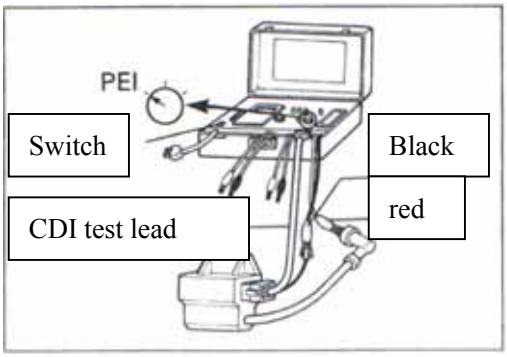
As the SCR conducts, the energy which has been charged in the capacitor is instantaneously discharged through the primary winding of the ignition coil.

CDI UNIT AND IGNITION COIL INSPECTION

CHECKING WITH ELECTRO TESTER

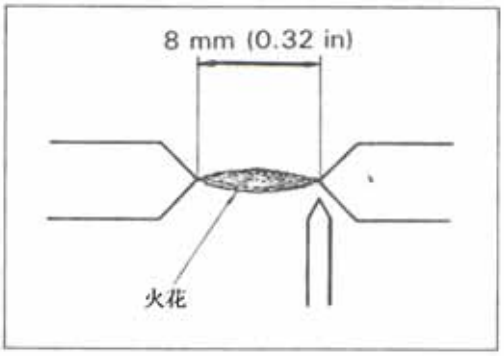
Connect the CDI test lead to the coil"s primary connector.

Connect the high tension leads, red○,+ lead to the spark plug cord and the black○,— lead to the black lead of the test lead.



- Set the test selector knob to "P.E.I".
- Connect the power lead to the appropriate AC source.
- Switch the power on.

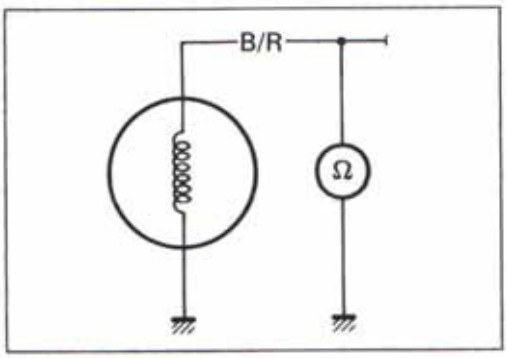
● Note the spark in the spark gap window. It should be strong and continuous, not intermittent, acrossa preset 8mm(0.32in) gap. Allow the spark to jump the test gap for at least five minutes continuously. To insure proper operation under the temperature of actual riding.



Electronic tester

Ignition coil testing lead

Use portable tester to check it.
Test the resistance between igntion ground wire and spark plug cap.
Ignition coil second resistance：12-18 KQ



MAGNETO EXCITING COIL

- remove the right frame side cover
- disconnect the exciting coil lead wire(black with red tracer).
- Using a pocket tester, measure the resistance between the B/R lead wire and ground. If the resistance checked is incorrect, replace the coil.

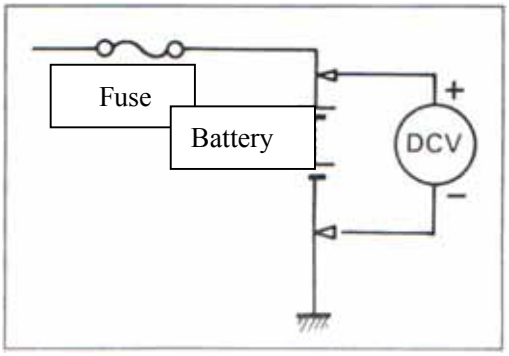
Exciting coil restance：140-220

CHARGING AND LIGHTING SYSTEM

The charging system uses the flywheel magnetoas shown in the figure. The charging and lighting coils are mounted on the magneto stator and generate AC as the flywheel rotor turns. AC generated in the charging coil flows to the regulator/recifier which changes AC to DC. The DC Then charges the battery.

Charging output check

start the engine and keep it running at 5000r/min with lighting switch turned on.



NOTE:

When making the test, be sure that the batteryis in fully charged condition.

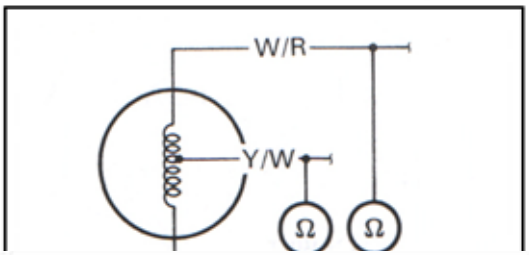
Tachometer

Standard charging output：13-16v at 5000r/min

NO-LOAD PERFORMANCE

- Disconnect the magneto lead wire coupler.
- Start the engine and keep it running at 5000r/min.
- Using a pocket tester, measure the AC voltage between the white and red tracer lead wire and ground. If the tester reading is as follows, magneto is in good condition.

Standard no-load performance: more than 65v(AC)AT 5000R/MIN.



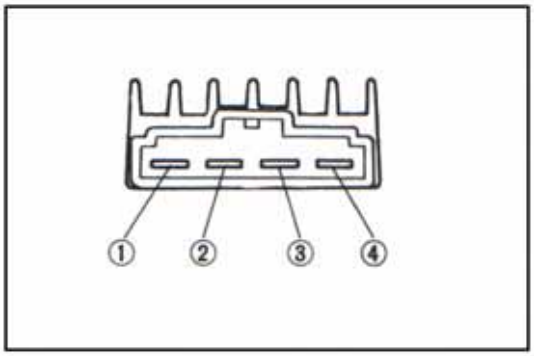
STATOR COILS

Inducing coils

Use procket tester to measure the resistance between the lead wire and ground. If the resistance checked is not correct, replace the coil.

Rregulator/rectifier

	Standard resistance
W/R-GROUND	0.6-1.1Q
W/R-GROUND	0.5-0.8 Q



Di

sconnect the lead wire couple.

Using the pocket tester（× 1KQ RANGE）, measurethe resistance between the terminals as shown in the following table. If the resitance checked is incorrect, replace the regulator/rectifier.

UNIT:

NOTES：

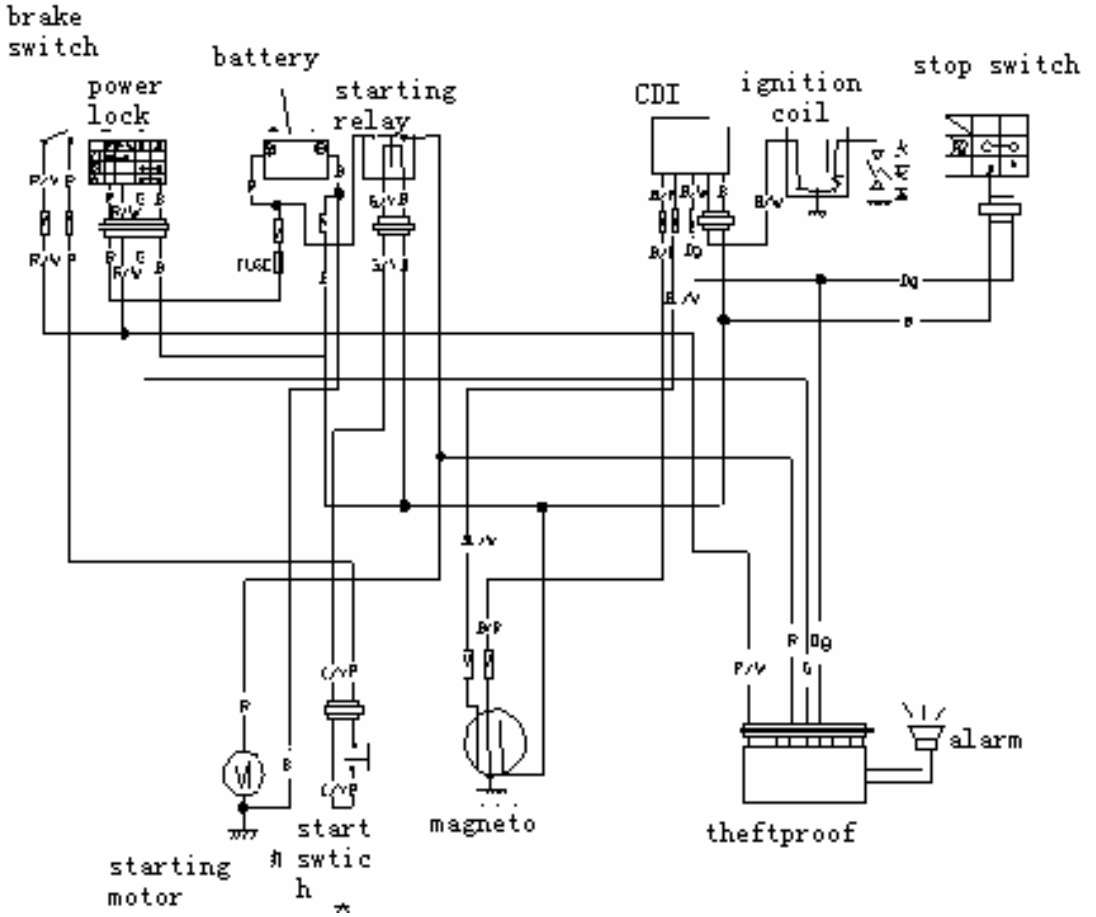
Including the components such as transistor,capacitance, regulator diode and so on, so tested resistance may be different from actual resistance.

	①	②	③	④
①		10—100	∞	∞
②	10—100		∞	∞
③	∞	∞		5—30
④	∞	∞	∞	

STARTER SYSTEM

DESCRIPTION

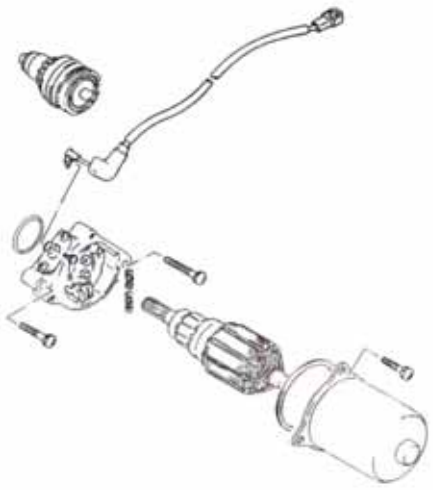
The starter system is shown in the diagram below: namely, the starter motor, relay, starter switch and battery. depressing the starter button while squeezing the front or rear brake lever energizes the relay, causing the contact points to close which connects the starter motor to the battery.



Starter motor removal and disassembly

Remove the starter motor

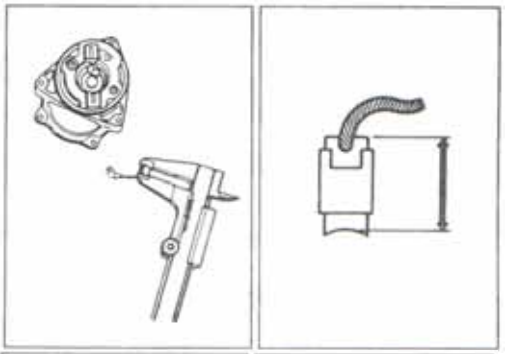
Disassemble the starter motor as shown in the illustration



STARTER MOTOR INSPECITION

CARBON BRUSHES

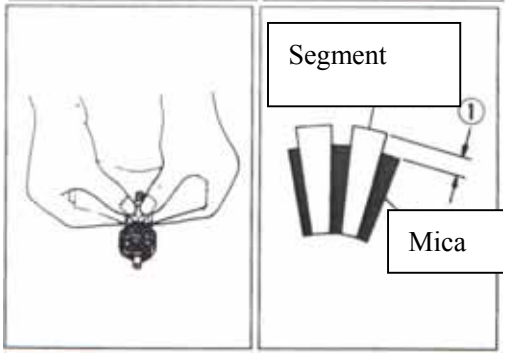
When the brushes are worn, the motor will be unable to produce sufficient torque, and the engine will be difficult to turn over. To prevent the , periodically inspect the length of the brushes and replace them when they are too short or chipping.



Service limit：3.5mm(0.14in)

Commutator

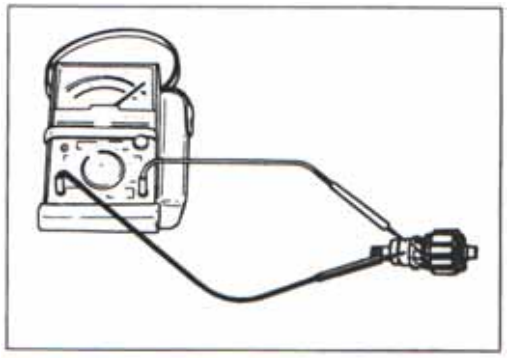
If the commutator surface is dirty, starting performance will decrease. Polish the commutator with #400 or similar fine emery paper when it is dirty.



Service limit：0.2mm(0.008in)

Armature coil

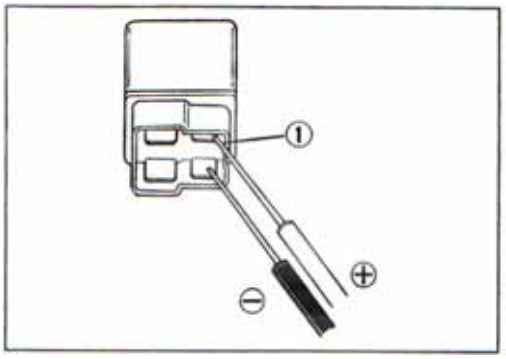
using the pocket tester, check the coil for open and ground by plcing probe pins on each commutator segment and rotor core and on any two segments at various places. With the brushes lifted off the commutator surface. If the coil is found to be open-circuited or grounded, replace the armatrue.



Starter relay inspection

- Disconnect lead wire (R/W) of the starter motor. Turn on the igniton switch and squeeze the front or rear brake lever, then inspect the continuity between the Red and Red/White lead wires at the starter relay when pushing the starter button.

If the starter relay is in sound condition, continuity is found.



- Disconnect the starter relay lead wire couple. Check the coil for “open”, “ground” and ohic resistance. The coil is in good condition, if the resistance is as follows:

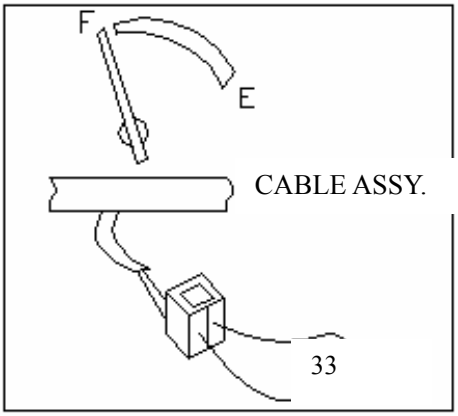
STANDARD RESTANCE:：80-150Q

FUEL LEVEL METER/GAUGE

FUEL METER INSPECTION

To test the Fuel Meter two different checks may be used. The first,and simplest test will tell if the mete is operating but will not indicate the meters accuracy throughout the range.To perform the test,lift the seat and remove the right frame cover,then disconnect the B/W and Y/B lead connector of the fuel gauge sending unit.Connect a jumper wire between B/M and Y/B wiers coming from the main wiring harness.With the ignition switch tuined ON,the fuel meter should indicate“F”.

The second test will check the accuracy of the meter in the full and empty positions.Connect a 90-ohm resistor between the Y/B and B/W lead wires.The fuel meter is normal if its pointer indicates the E(empty) position when the specified voltage is applied to the circuit and if its pointer indicates the F(full) position when the resistor is changed to 10 ohms.If either one or both indications are abnormal,replace the fuel meter with a new one.



FUEL GUAGE SENDING UNIT INSPECTION

Disconnect the lead wires coming out of the fuel gauge and check resistance of eadn podition.

If the resistance measured is incorrect, erplace the fuel gaue assembly with a new one.

The relation between the position of the fuel guage float and resistance is shown in the following table.

FLOAT POSITION	RESISTANCE
F（FULL）	APPROX.33
1/2	APPROX.200
E（EMPTY）	APPROX.566

SIGNAL SYSTEM

The same bulb is used tor both oil level check light and turn signal indicator light.The circuitry is shown below.When the oil level has fallen to a certain level (the remaining amount of oil has become approximately 160 ml,the oil level check light turns on and remains lit.When the turn signal switch is turned on and the turn signal light flashes,the turn signal indicator light (oil level check light)also flashes,both being not concurrently but alternatively as one being lit white the other unit.

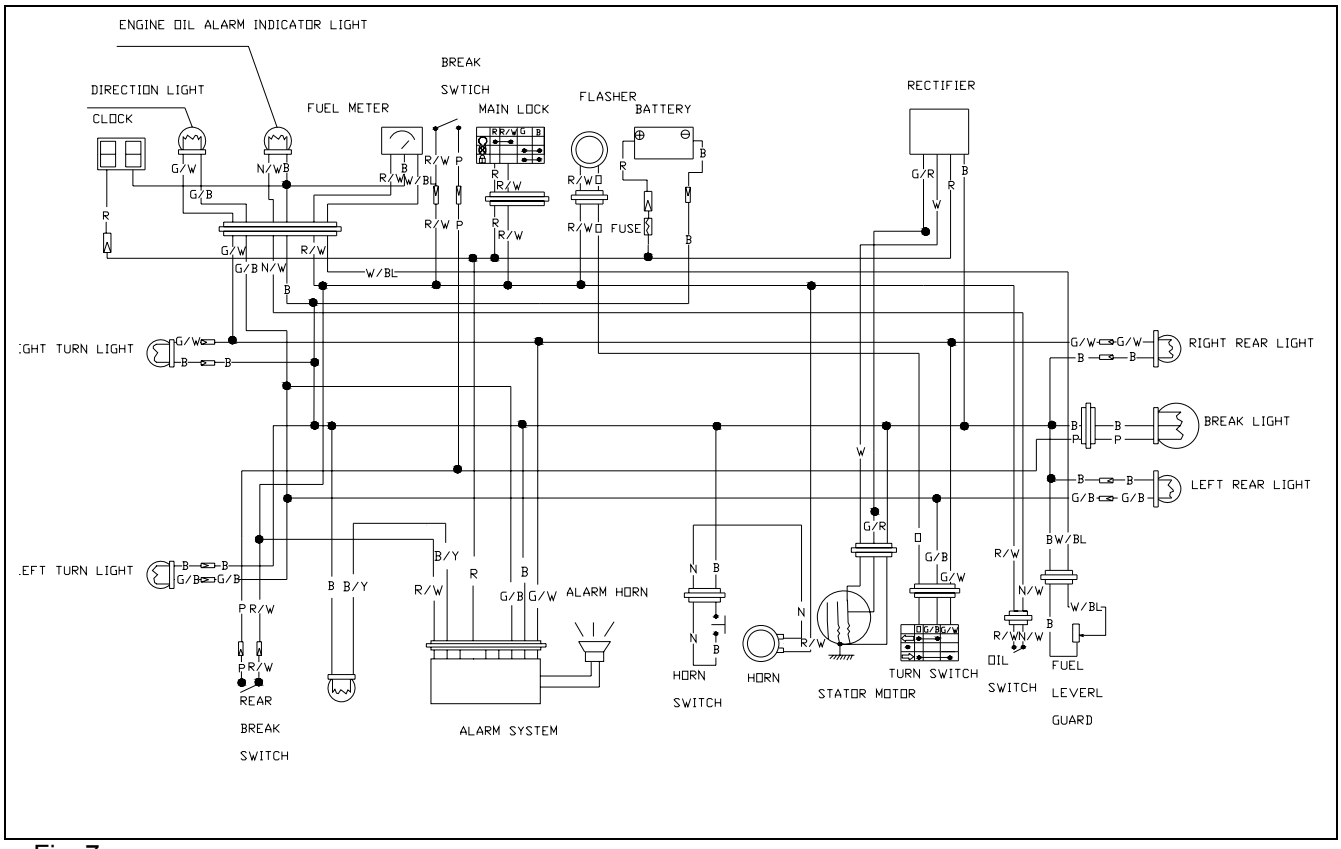


Fig. 7

OIL LEVEL SWITCH INSPECTION

Check the oil level switch for continuity between the lead wire.If the tester does not show the value of 0-1 ohm when the switch ring is in bottom position,file the contact surface or replace the unit.

SWITCH

MAIN SWITCH

	RED	RED/WHITE	DARK GREEN	BLACK
ON	●	●		
OFF			●	●
LOCK			●	●

LIGHT CONTROL SWITCH

	GREEN/RED	YELLOW/RED	YELLOW	PINK	YELLOW
HEAD LIGHT	●	●			●
PASSING LIGHT	●		●		●
OFF	●			●	

BREAK SWITCH

	RED/SWITCH	PURPLE
ON	●	●
OFF		

EXCHANGE LIGHT SWITCH

	YELLOW/RED	BULE	AZURY
HIGH BEAM	●	●	
DIPPED HEADLIGHT	●		●

HORN SWITCH

	RED/WITHE	BROWN
ON	●	●
OFF		

DIRECTION SWITCH

	ORANGE	GREEN/BLACK	GREEN/WHITE
TURN LEFT	●	●	
TURN RIGHT	●		●

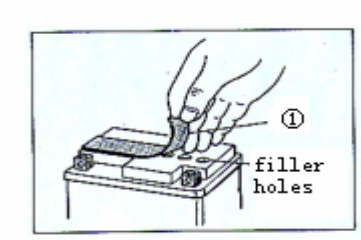
BATTERY

SPECIFICATIONS

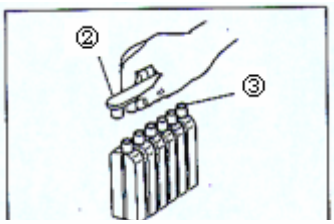
Type designation	YB4L-B
Capacity	12V 4Ah
Standard electrolyte	1.28(20□)

INITIAL CHARGING

FILLNG ELECTROLYTE
Remove the aluminum tape □ sealing the battery electrolyte filler holes.



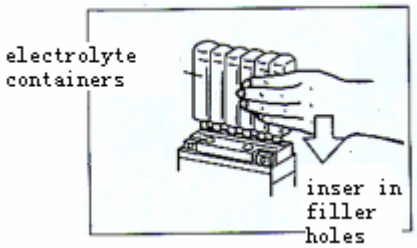
Remove the caps □.



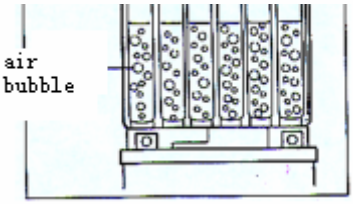
NOTE：

* After filling the electrolyte completely,use the removed cap □ as the sealed caps of battery-filler holes.
* Do not remove or pierce the sealed areas □ of the electrolyte container.

Insert the nozzles of the electrolyte container into the battery`s electrolyte filler holes,holding the container firmly so that it doer not fall.Take precaution not to allow any of the fluid to spill.



Make sure air bubbles are coming up each electrolyte container,and leave in the positon for about more than 20 minutes.



Test the battery after the filling process. If necessary charge the battery about 20 minutes with the charger.

RECHARGING OPERATION

Apply multimeter to measure the voltage of battery. If the reading is below 12.0V，it should be charged.

NOTE:

When recharging, remove the battery form the vehicle.

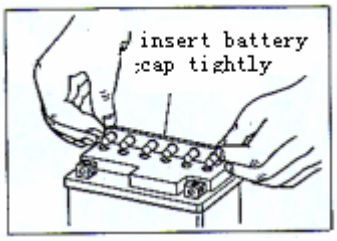
NOTE:

When recharging, don’t remove the sealing cap off battery top.

Recharging time：0.4A or for 5 hours or 4.0A for 1 hour.

NOTE:

The current should be not more than 4A at any time.



After recharging, wait for more than 30 minutes and apply multimeter to measure the battery voltage.

If the battery voltage is less than12.5V，please rechare the battery again.

If battery voltage is still less than 12.5V，please replace the battery with a new one.

When the battery is left for a long term without using, it is subject to discharge. When th scooter is not used for more than 1 month (especially dring the winter season), recharge the battery once a month at least.

CHAPTER 6 CHASSIS

CONTENTS

LEG SHIELD AND FRAME SIDE COVERS
LEG SHIELD REMOVAL
LEG SHIELD REMOUNTING
FARME SIDE COVER REMOVAL
FARME SIDE COVER REMOUNTING
HANDLEBAR COVERS
REMOVAL
REMORNTING
FRONT WHEEL
REMORAL
INSPECTION AND DISASSEMBLY
REASSEMBLY AND REMOUNTING
FRONT BRAKE
BRAKE PAD REPLACEMENT
CALIPER REMOVAL AND DISASSEMBLY
CALIPER AND DISC INSPECTION
CALIPER REASSEMBLY
MASTER CYLINDER REMOVAL AND DISASSEMBLY
MASTER CYLINDER INSPECTION
MASTER CYLINDER REASSEMBLY AND REMOUNTING
STEERING STEM AND FRONT SUSPENSION
REMOVAL AND DISASSEMBLY
INSPECTION
REASSEMBLY AND REMOUNTING
IGNITION SWITCH
REAR WHEEL AND BRAKE
REMOVAL AND DISASSEMBLY
INSPECTION
REASSEMBLY AND REMOUNTING

Side cover removal

1. remove seat and helmet barrel by opening seat and loosing tightening screw □.

2. loose hexad screw □ and remove decorating cap □, rear carrier and oil tank lock □， remove side cover □ by loosing cover screw □ □；

side

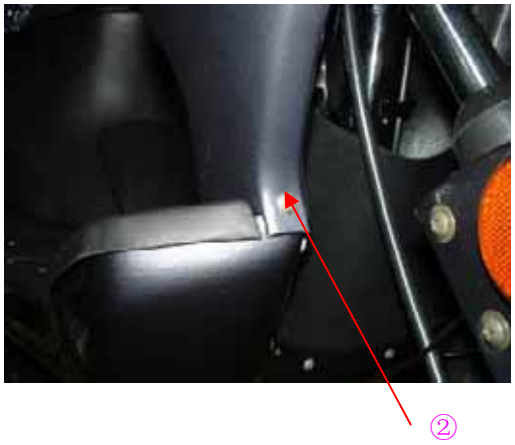
3. unlock oil pump cap and remove it, two tapping screw are exposed, remove them; remove tapping screw□； then remove side cover□

side installation

4. the sequence of installation is the reverse of removal.

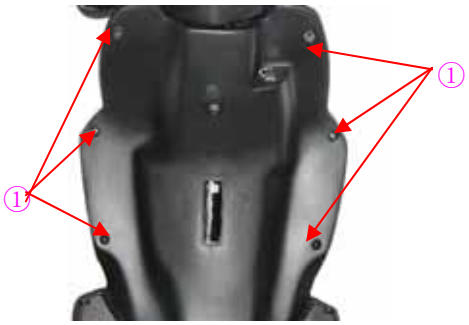
under cover removal

1. unscrew screw □ and bolt □
2. removing under cover by loosing the left and right tapping screws □；



under cover installation

3. The sequence if installation is ther reverse of removal.



front cover removal

1. Unscrew tapping screw □, and remove front cover □ by removing front cover screw□

LEGSHIELD AND PEDAL REMOVAL

1. Remove power lock housing □ by unscrewing bolt□.

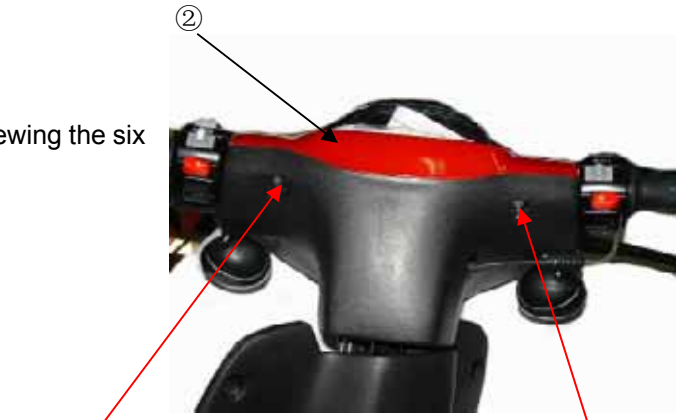
3. remove legshield and pedal by unscrewing the four bolts□

Legshield and pedal installation

4. the sequence of legshield and pedal is the reverse of reomval；

HANDLE COVER REMOVAL

1. Remove front handle cover □ by unscrewing the six tapping screws □

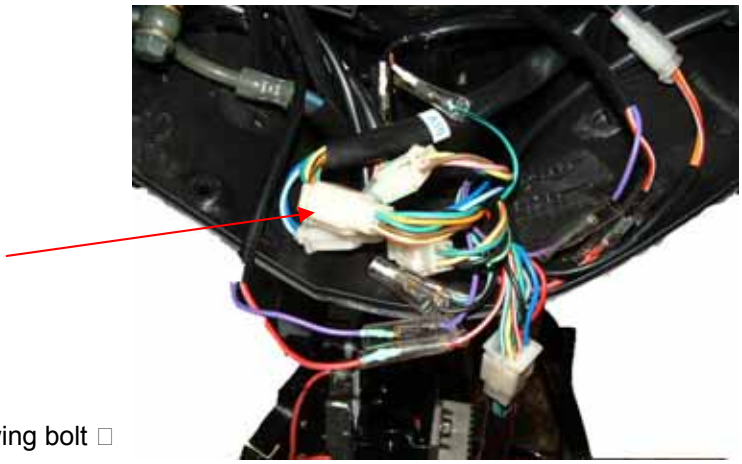


1. Remove master cylinder by removing the bolt □;

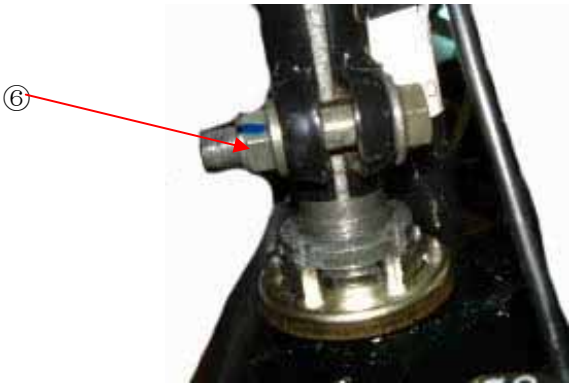
3． Disconnect throttle cable□ and oil pump cable□

4．Remove rear brake cable adjusting nut □

Handle cover removal
5. remove all cables；



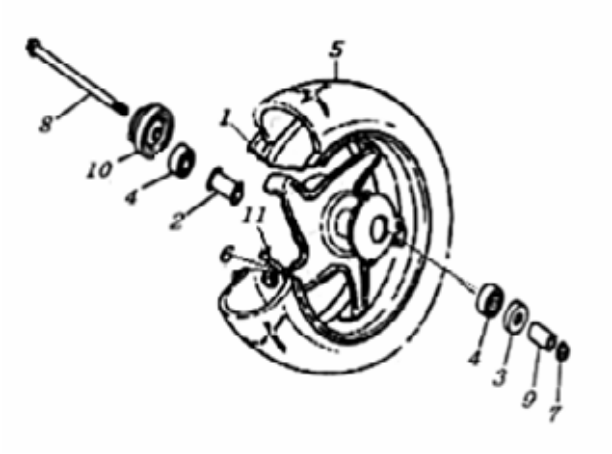
6．Remove handle cover by unscrewing bolt □



Handle cover unstallation
7. The sequence of removal is the reverse of reomval

Front wheel

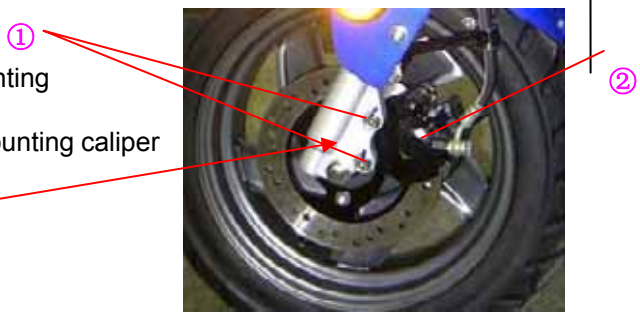
1. front rim
2. middle bushing
3. oil seal
4. roller bearing GB6201-2RS
5. tire
6. valve mouth
7. nut GB6817
8. front shaft
9. front wheel left bushing
10. gearcase
11. valve mouth cap



remove

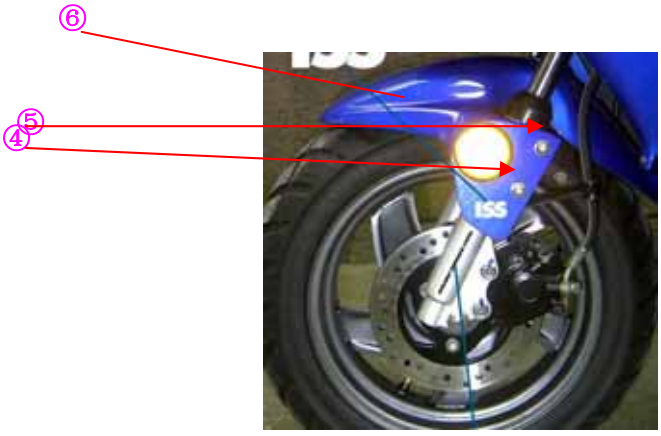
Remove the front brake caliper □ by removing the mounting bolts.

NOTE：Do not operate the front brake lever while dismounting caliper



·remove mounting bolt□

·remove the left decorating cover □ and right one □.



·remove under front fender □

·support the scooter by jack or wood shelf.

·Remove front wheel by removing front axle shaft.

INSPECTION AND DISASSEMBLY

WHEEL BEARING

Inspect the play of bearing inner ring by hand while mounted in the wheel.

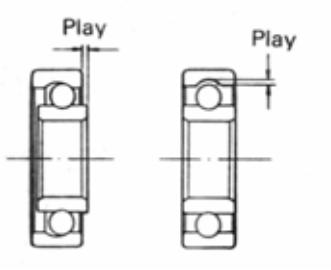
Rotate the inner ring by hand to inspect if any abnormal noise occurs or rotating smoothly,

Replace the bearing if there is anything ucusual.

·Remove the dust seal.

CAUTION:

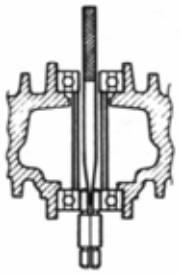
The removed dust seal and bearing should be replaced with new ones.



AXLE SHAFT

Check the axle shaft runout with a micrometer and replace it if the runout exceeds the limit.

Service limit:0.25mm (0.010in)

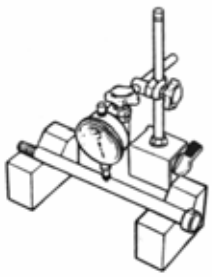


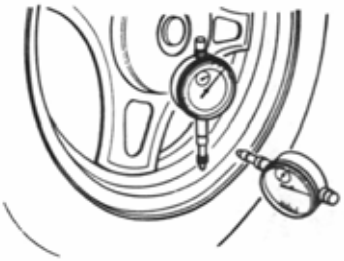
WHEEL RIM

Make sure that the wheel rim runout does not exceed the service limit when checked as shown.

An excessive runout is usually due to worn or loose wheel bearings and can be reduced by replacing the bearings.If bearing replacement fails to reduce the runout,replace the wheel.

Service Limit:2.0mm (0.08in)）





Reassembly and remounting

Reassemble and remount this front wheel in the reverse order of removal, and also carry out the following steps:

install this wheel bearing with the special tools as shown in this illustration.

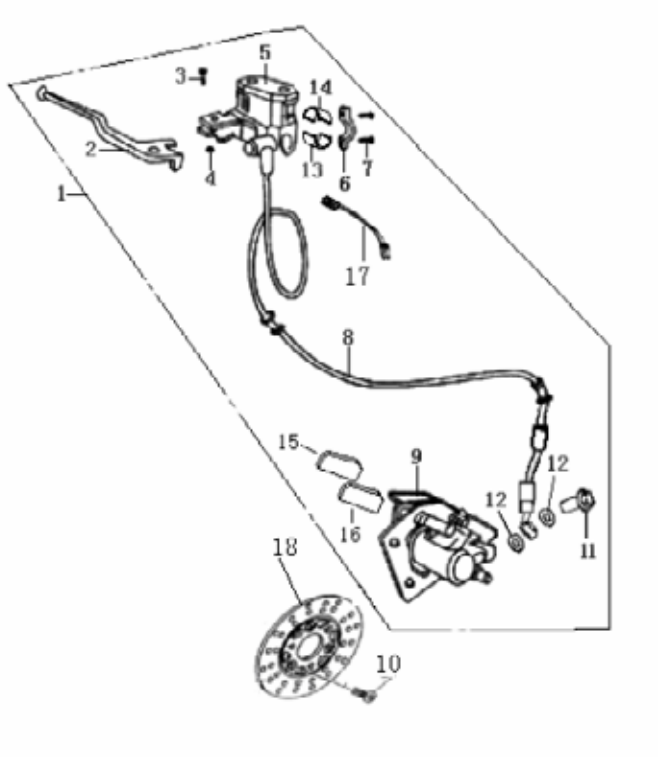
CAUTION: Install this wheel bearing for left side..

Install the brake disc as shown in photo.

When installing this speedometer gear box, align the two driving pawls with the two recesses of the wheel hub.
Tighten the nut with special tool.

FRONT BRAKE SYSTEM

1. disc brake assy.
2. disc brake handle lever
3. tightening bolt
4. nut M6
5. master cylinder
6. tightening seat
7. bolt M6X23
8. brake hose assy.
9. brake caliper
10. connecting board tightening bolt
11. hose mounting bolt
12. seal gasket
13. front gasket
14. rear gasket
15. brake pad 1
16. brake pad 2
17. master cylinder rubber bushing
18. front brake switch

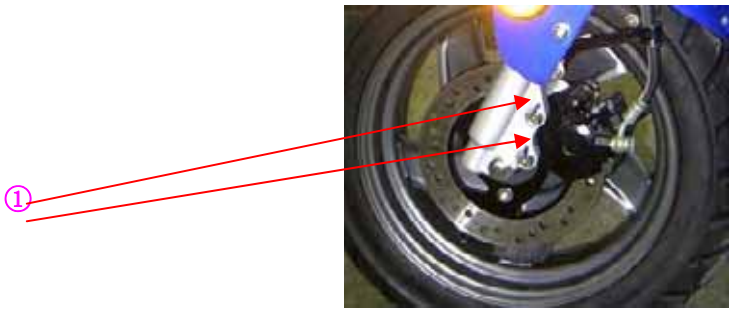


RAKE PAD REPLACEMENT

Remove the calliper by removing the mounting bolts □ .

NOTE:

Do not operate the front brake lever while dismounting the calliper.



·Remove the brake pads.

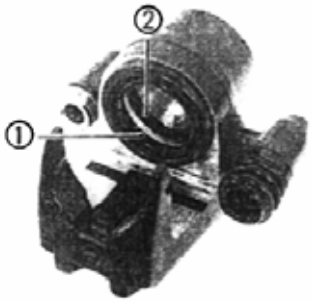
CAUTION:
Replace the brake pads as a set,otherwise braking performance will be adversely affected.

Reassemble and remount the calliper.

CALIPER REMOVAL AND DISASSEMBLY
Remove the brake hose and catch the brake fluid in a suitable receptacle.
CAUTION:
Nevere re-use the brake fluid left over from the last servicing and stored for long periods.

·Remove the calliper.
·Remove the brake pads.
·Remove the spring and pad holder.

·Place a rag over the piston to prevent popping up.Froce out the piston with a air gun.
CAUTION:
Do not use high pressure air to prevent piston damage.

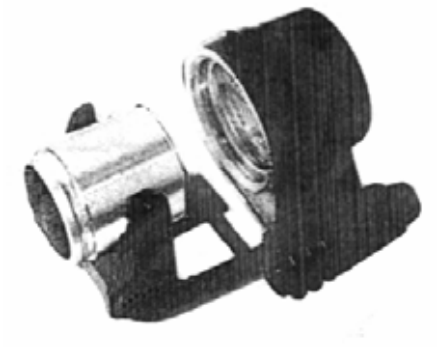


·Remove the dust seal □ and piston seal □.

CALIPER AND DISC INSPECTION

Inspect the calipe cylinder bore wall or micks,scratches or other damage.

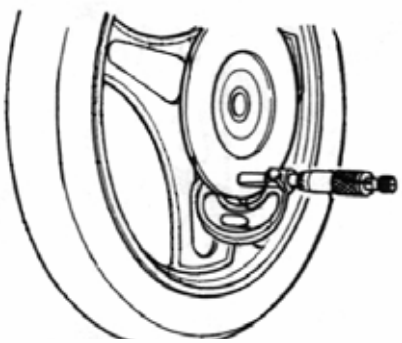
Inspect piston for damage and wear.



Inspect each rubber part for damage and wear.

Check the disc for wear with a micrometer.Its thickness can be checked with disc and wheel in place. Ralpace the dise if the thickness exceeds the service limit.

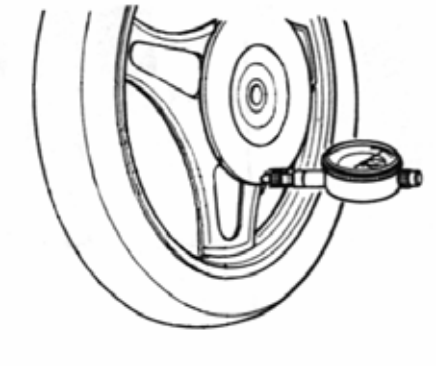
Service Limit:3.5 mm (0.14 in)



With the disc mounted on the wheel, check the dids for face runout with a dial gauge as shown.

Replace the disc if the runout exceeds the service limit.

Service Limit:0.3 mm(0.012 in)

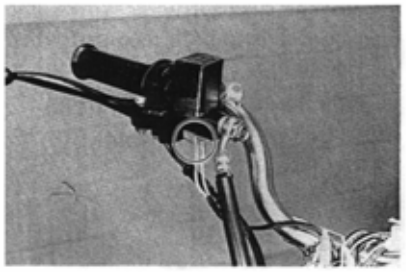


BRAKE CALIPER REASSEMBLY

Reassemble and remount the calliper in the reverse order of removal and disassembly, and also carry out the following steps.
CAUTION:
Wash the calliper components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them.Apply brake fluid to the calliper bore and piston to be inserted into the bore.

Reassemble and remount the calliper. (refer to preceding bove pages)
WARNING:
Bleed air after remounting the calliper. (refer to above pages)

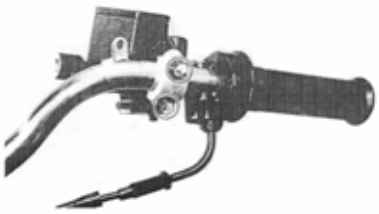
MASTER CYLINDER REMOVAL AND DISASSEMBLY
Remove the handlebar cover. (Refer to above page)
Disconnect the front brake light switch lead wires.



Place a cloth underneath the union bolt on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose master cylinder joint.

CAUTION:
Completely wipe off any brake fluid adhering to any part of motorcycle. The fluid reacts chemically with paint, plastics, rubber materials, etc.

Remove the master cylinder.



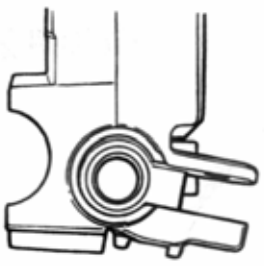
Remove the brake lever and brake switch.

Remove the dust boot.

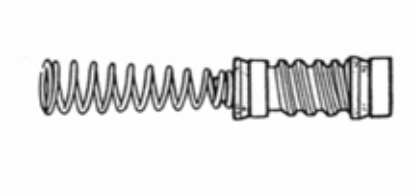
Remove the circlip with the special tool.

Remove the piston/primary cup with return spring.
Remove the reservoir cap and diaphragn.
Drain brake fluid.

MASTER CYLINDER INSPECTION
Inspect the master cylinder bore for any scratches or other damage.



Inspect the piston surface for scratches or other damage.
Inspect the primary cup and dust boot for wear or damage.

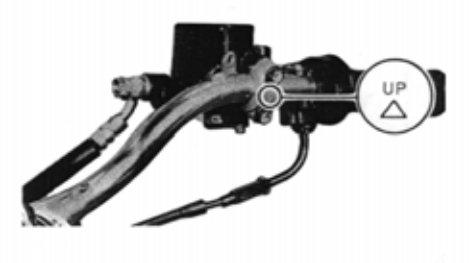


MASTER CYLINDER REASSEMBLY AND ERMOUNTING
Reassemble and remount the master cylinder in the reverse order of removal and disassembly,and also carry out the following steps.

CAUTION:
Wash the master cylinder components with fresh brake fluis before reassembly. Never use cleaning solvent or gasoline to wash them.
Apply brake fluid to the cylinder bore and all the internals to be inserted into the bore.

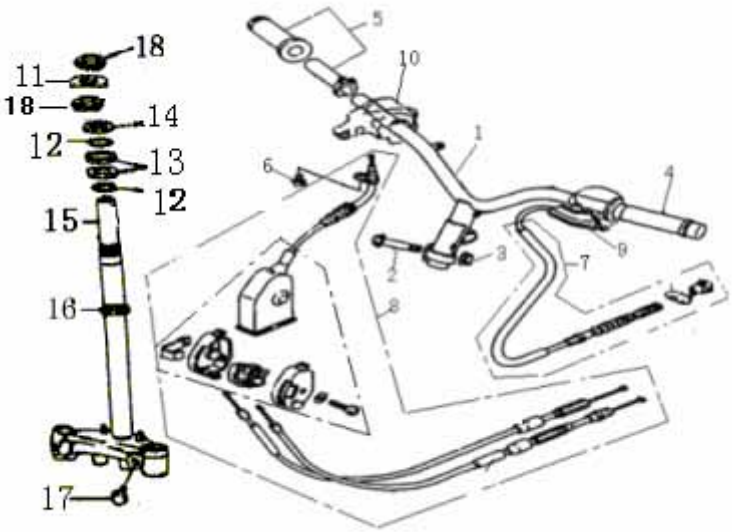
Reassemble and remount the master cylinder, When remounting the master cylinder on the handlebar,first tighten the clamp bolt for upside.

CAUTION:
Bleed air after remounting the master cylinder.



STEERING STEM AND FRONT SUSPENSION

1. handle jointing assy.
2. bolt GB5789 M10X1.25X45
3. nut GB6187 M10X1.25
4. left handlebar
5. throttle grip assy.
6. screw GB818 M5X10
7. rear brake cable assy.
8. throttle cable assy.
9. left switch comp.
10. right switch comp.
11. anti-dust cover
12. steel ball ¢5
13. lower outer steel bowl
14. connecting steel bowl
15. under connecting borad assy.
16. lower inner steel bowl
17. bolt GB5789 M10X1.25X30
18. locknut



REMOVAL AND DISASSEMBLY

（Refer to preceding page）

☐ remove the handle cover（refer to preceding page）

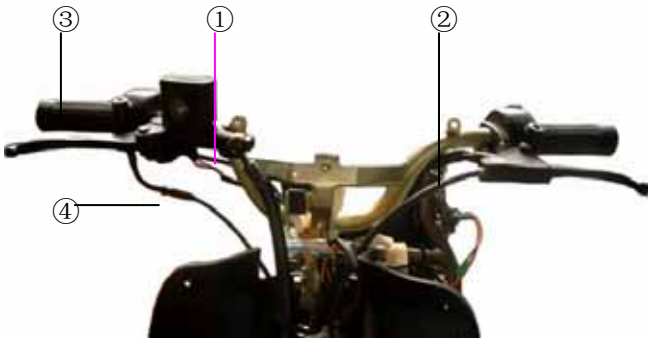
☐ remove under decorating cover（refer to the preceding page）

☐ remove legshield（refer to preceding page）

☐ remove front wheel（refer to preceding page）

☐ disconnect the front and rear brake light switch lead wires □.

☐ Remove the rear brake cable □.

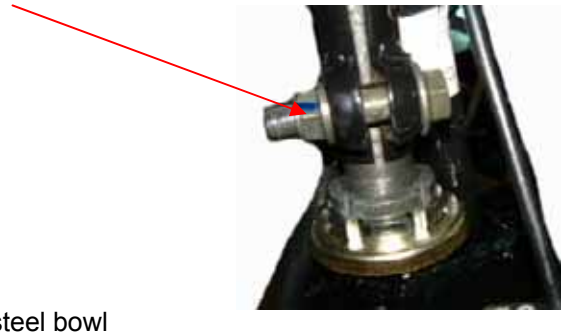


☐ Remove throttle grip case □.

☐ Remove throttle cable □.

☐ remove disc brake system by unscrewing tightening bolt.

☐ remove handle by removing tightening bolt

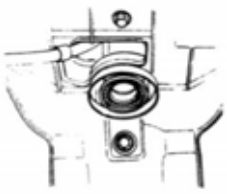


☐ unscrew locknut with special tool

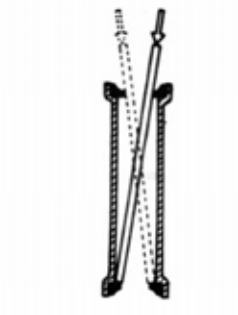
☐ remove fornt fork assy. by removing upper outer steel bowl

NOTE:
Not drop the steering stem balls.

☐ remove front fork



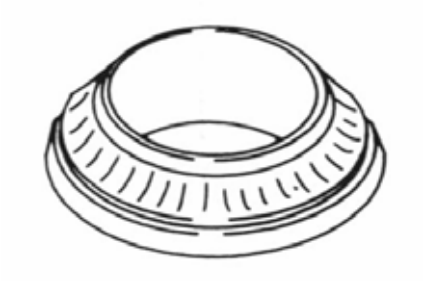
☐ remove bearing lower race by chisel.
☐ Remove steel balls.
Number of steel balls：
Upper：21
lower：21
☐ remove the upper and lower bearing inner races with a appropriate bar



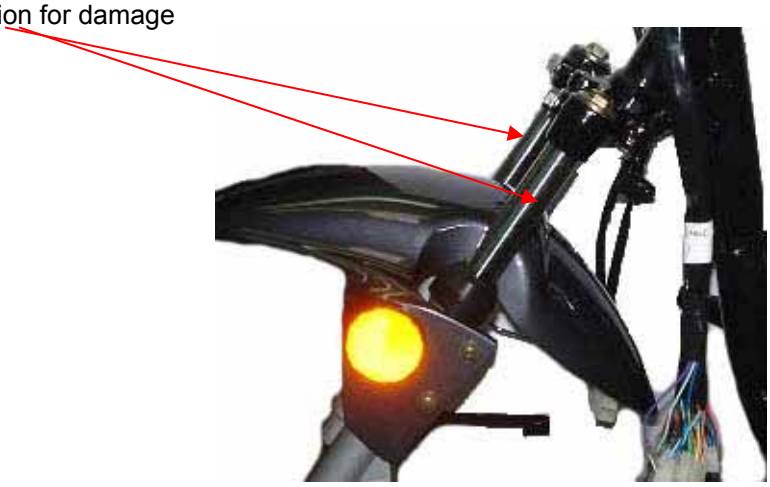
INSPECTION

☐ inspect the removed parts for the following abnormalities.

- ◆ bearing race wear and brinelling.
- ◆ Worn and damaged steel balls
- ◆ Distortion of steering stem or handlebar.



☐ Inspect the suspension for damage



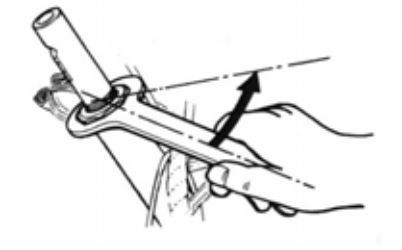
Reassembly and remounting

reassemble and remount the steering stem, handlebar and front fork in the reverse order of disassembly andremoval, and also carry out the following steps.

Install the right left suspension arms.

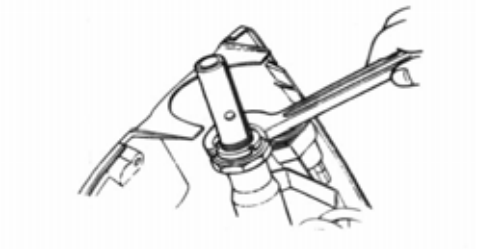
Steel ball
Apply grease when installing the upper and lower steel balls.
QTY：upper ： 21
lower ： 21

Tighten the steering outer race with special tool, then extrude it 1/8-1/4round.
NOTE：adjustment will vary from scooter to scooter. Be sure that the steering turns smoothly and easily, left to right.



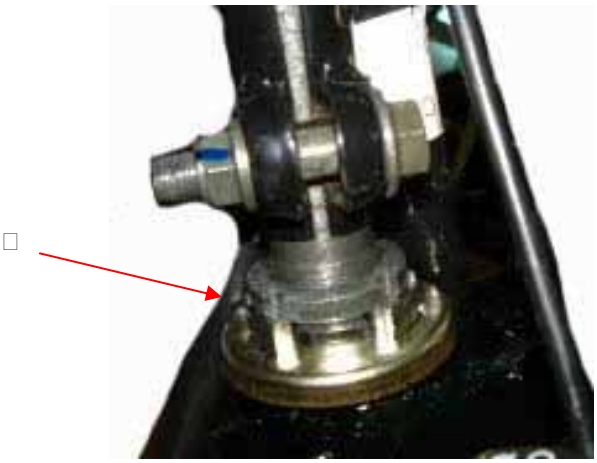
□ install a locknut by installing locknut and anti-dust cover

□ screw locknut with special tool, and adjust front fork bearing to get smooth turning.



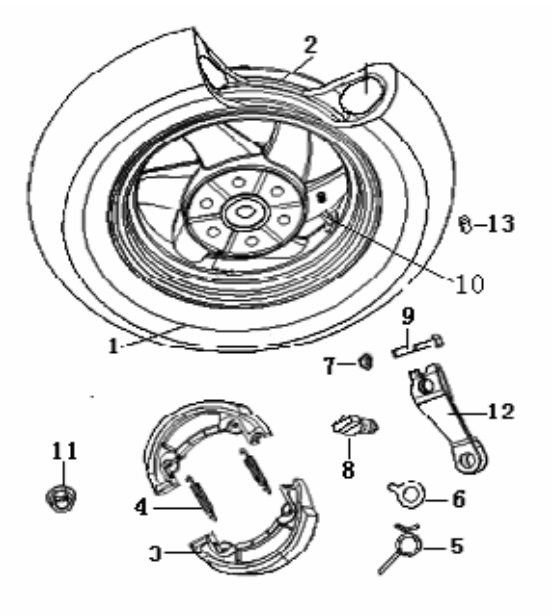
install handlebar and tighten the screw and bolt

to the specified torque：37-44N.M



NOTE:
After performing the adjustment and installing the handlebar, rock the front wheel forward and backward to ensure that there Is not play and that the procuder is accomplished correctly. If play is noticeable, raadjust the steering outer race nut.

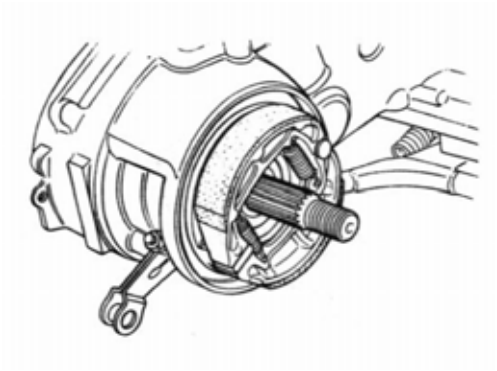
REAR WHEEL AND BRAKE



1. Tire 130/70-12
2. rear rim assy.
3. brake pad kit assy.
4. brake pad kit spring
5. rear brake tension
6. rear indicator
7. anti-dust cover
8. rear brake camshaft
9. bolt M6X30
10. valve
11. nut M16X1.5
12. rear brake arm
13. valve cap

REMOVE

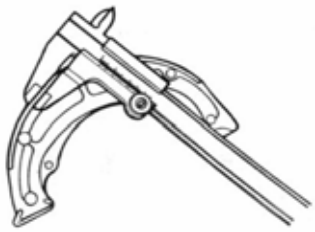
☐ Place the scooter on level ground.
☐ Remove muffler.
☐ Remove rear small fender.
☐ Remove locknut and rear wheel.
☐ Remove brake shoes.



INSPECTION
REAR RIM
Measure inner diameter of rear rim hub with micrometer, if measured diameter exceeds 110.7, replace it with a new one.

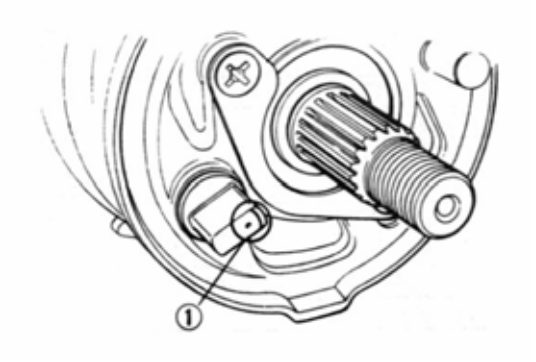
Brake shoes
Check the brake shoe and decide whether it should be replaced or not from the thickness of the brake shoe lining.

Service limit：2.5mm(0.09in)

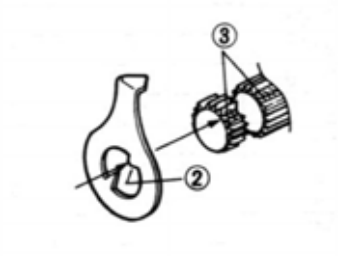


REASSEMBLY AND REMOUNTING

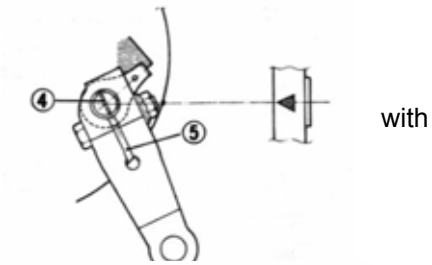
Reassemble and remount the rear wheel and brake in the reverse of removal, and also carry out the following steps:



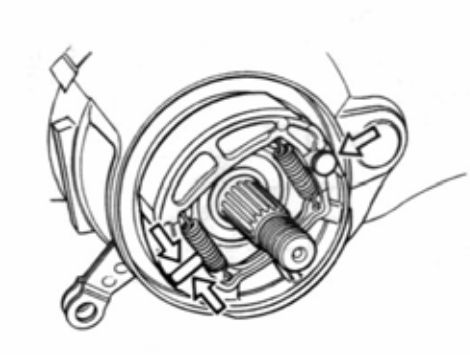
☐ Turn the punched mark □ on the camshaft to the rear axle shaft side.



☐ Install the protrusion □ of indicator plate to the groove □ of Camshaft.



☐ When installing the brake cam shaft, aligh the groove □ of camshaft with the slit □ of on cam shaft.



☐ When installing brake shoes, be sure to daub camshaft with adequate grease.

CAUTION:
Be careful not to daub the camshaft with too much grease.
If grease gets on the lining, brake effectiveness will be lost.

CONTENTS

Troubleshooting
Battery
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TROUBLESHOOTING

ENGINE

Complaint	Symptom and possible causes	Remedy
Engine does not start, or is hard to start.	**Compression too low**	
	1. Excessively worn cylinder or piston rings.	Replace.
	2. Stiff piston ring in place.	Repair or replace.
	3. Gas leaks from the joint in crankcase, cylinder or cylinder head.	Repair or replace.
	4. Damaged reed valve.	Replace.
	5. Spark plug too loose.	Tighten
	6. Broken, cracked or otherwise failed piston.	Replace.
	Plug not sparking	
	1. Damaged spark plug or spark plug cap.	Replace.
	2. Dirty or wet spark plug.	Clean and dry.
	3. Defective CDI & ignition coil unit or stator coil.	Replace.
	4. Open or short n high-tension cord.	Replace.
	5. Defective ignition switch.	Replace.
	No fuel reaching the carburetor	
	1. Clogged hole in the fuel tank cap.	Clean.
	2. Clogged or defective fuel cock.	Clean or replace.
	3. Defective carburetor float valve.	Replace.
	4. Clogged fuel hose or defective vacuum hose.	Clean or replace.
Engine stalls easily.	1. Carbon deposited on the spark plug.	Clean.
	2. Defective CDI & ignition coil unit.	Replace.
	3. Clogged fuel hose.	Clean.
	4. Clogged jets in carburetor.	Clean.
	5. Clogged exhaust pipe.	Clean.
Noisy engine.	**Noise appears to come from piston**	
	1. Piston or cylinder worn down.	Replace.
	2. Combustion chamber fouled with carbon.	Clean.
	3. Piston pin, bearing or piston pin bore worn.	Replace.
	4. Piston rings or ring grooves worn.	Replace.
	Noise seems to come from crankshaft	
	1. Worn or burnt crankshaft bearings.	Replace.
	2. Worn or burnt conrod big-end bearings.	Replace.
	Noise seems to come from final gear box	
	1. Gears worn or rubbing.	Replace.
	2. Badly worn splines.	Replace.
	3. Worn or damaged bearing of drive shaft or rear axle shaft.	Replace.
Slipping clutch	1. Worn or damaged clutch shoes.	Replace.
	2. Worn clutch drum.	Replace.
Engine idles poorly.	1. Excessively worn cylinder or piston rings.	Replace.
	2. Stiff piston ring in place.	Replace.
	3. Gas leaks from crankshaft oil seal.	Replace.
	4. Spark plug gaps too wide.	Adjust or replace.
	5. Defective CDI & ignition coil unit.	Replace.
	6. Defective magneto stator coil.	Replace.
	7. Float-chamber fuel level out of adjustment in carburetor.	Replace.
	8. Clogged jets in carburetor.	Clean or adjust.
	9. Broken or damaged reed valve.	Replace.

Complaint	Symptom and possible causes	Remedy
Engine runs poorly in high-speed range.	1. Excessively worn cylinder or piston rings. 2. Stiff piston ring in place. 3. Spark plug gaps to narrow. 4. Ignition not advanced sufficiently due to poorly working CDI & ignition coil unit. 5. Defective magneto stator coil. 6. Float-chamber fuel level too low. 7. Clogged air cleaner element. 8. Clogged fuel hose, resulting in inadequate fuel supply to carburetor. 9. Clogged fuel cock vacuum pipe.	Replace. Replace. Adjust. Replace. Replace. Adjust or replace. Clean. Clean and prime. Clean.
Dirty or heavy exhaust smoke.	1. Too much engine oil to the engine. 2. Use of incorrect engine oil.	Check oil pump. Change.
Engine lacks power.	1. Excessively worn cylinder or piston rings. 2. Stiff piston rings in place. 3. Gas leaks from crankshaft oil seal. 4. Spark plug gaps incorrect. 5. Clogged air cleaner element. 6. Float-chamber fuel level out of adjustment. 7. Clogged air cleaner element. 8. Fouled spark plug, 9. Sucking air from intake pipe. 10. Slipping or worn V-belt. 11. Damaged/worn rollers in the movable drive face. 12. Weakened movable driven face spring. 13. Too rich fuel/air mixture due to defective starter system.	Replace. Replace. Replace. Adjust or replace. Clean. Adjust or replace. Clean. Clean or replace. Retighten or replace. Replace. Replace. Replace. Replace.
Engine overheats.	1. Heavy carbon deposit on piston crown. 2. Defective oil pump or clogged oil circuit. 3. Fuel level too low in float chamber. 4. Air leakage from intake pipe. 5. Use of incorrect engine oil. 6. Use lf improper spark plug. **7.** Clogged exhaust pipe/muffler.	Clean. Replace and clean. Adjust or replace. Retighten or replace. Change. Change. Clean or replace.

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	1. Starter jet is clogged. 2. Air leaking from a joint between starter body and carburetor. 3. Air leaking from carburetor's joint or vacuum hose joint. 4. Starter plunger is not operating properly.	Clean. Check starter body and carburetor for tightness, and replace gasket. Check and replace. Check and replace.
Idling or low-speed troubles.	1. Pilot jet, pilot air jet are clogged or loose. 2. Air leaking from carburetor's joint, vacuum pipe joint, or starter. 3. Pilot outlet is clogged. 4. Starter plunger is not fully close.	Check and clean. Check and replace. Check and clean. Check and replace.
Medium- or high-speed trouble.	1. Main jet or main air jet is clogged. 2. Needle jet is clogged. 3. Fuel level is improperly set. 4. Throttle valve is not operating properly. 5. Fuel filter is clogged.	Check and clean. Check and clean. Check and replace. Check throttle valve for operation. Check and clean.
Overflow and fuel level fluctuations.	1. Needle valve is worn or damaged. 2. Spring in needle valve is broken. 3. Float is not working properly. 4. Foreign matter has adhered to needle valve. 5. Fuel level is too high or low.	Replace. Replace. Check and adjust. Clean. Adjust and replace.

ELECTRICAL

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	1. Defective CDI & ignition coil unit. 2. Defective spark plug. 3. Defective magneto stator coil. **4.** Loose connection of lead wire.	Replace. Replace. Replace. Connect/tighten.
Spark plug soon becomes fouled with carbon.	1. Mixture too rich. 2. Idling speed set too high. 3. Incorrect gasoline. 4. Dirty element in air cleaner. 5. Spark plug loose. 6. Incorrect engine oil.	Adjust carburetor. Adjust carburetor. Change. Clean. Replace by hot type plug. Replace.
Spark plug electrodes overheat or burn.	1. Spark plug too hot. 2. The engine overheats. 3. Spark plug loose. 4. Mixture too lean. 5. Not enough engine oil.	Replace by cold type plug, Tune up. Retighten. Adjust carburetor. Check oil pump.
Magneto does not charge.	1. Open or short in lead wires, or loose lead connections. 2. Shorted, grounded or open magneto coil. 3. Shorted or open regulator/rectifier.	Repair or retighten. Replace. Replace.
Magneto charge, but charging rate is below the specifications.	1. Lead wires tend to get shorted or open-circuited or loosely connected at terminal. 2. Grounded or open-circuited stator coils of magneto. 3. Defective regulator/rectifier. 4. Defective cell plates in the battery,	Repair or retighten. Replace. Replace. Replace the battery.
Magneto overcharges.	1. Internal short-circuit in the battery. 2. Resistor element in the regulator/rectifier damaged or defective. 3. Regulator/rectifier unit poorly grounded.	Replace the battery. Replace. Clean and tighten ground connection.
Unstable charging.	1. Defective regulator/rectifier. 2. Lead wire insulation frayed due to vibration, resulting in intermittent shorting. 3. Magneto coil internally shorted.	Repair or replace. Replace. Replace.
Starter button is not effective.	1. Battery run down. 2. Defective switch contacts. 3. Brushes not seating properly on commutator in starter motor. 4. Defective starter relay. 5. Defective starter pinion gears 6. Defective front or rear brake light switch circuit.	Recharge and replace. Replace. Repair or replace. Replace. Replace. Repair or replace.

BATTERY

Complaint	Symptom and possible causes	Remedy
Battery runs down quickly.	1. The charging method is not correct. 2. Cell plates have lost much of their active material as a result of over-charging. 3. A short-circuit condition exists within the battery due to excessive accumulation of sediments caused by the incorrect electrolyte. **4.** Battery is too old.	Check the magneto and regulator/rectifier circuit connections, and make necessary adjustments to obtain specified charging operation. Replace the battery, and correct the charging system. Replace the battery. Replace the battery.
Reversed battery polarity.	1. The battery has been connected the wrong way round in the system, so that it is being charged in the reverse direction.	Replace the battery and be sure to connect the battery properly.
Battery discharges too rapidly.	1. Dirty container top and sides. 2. Battery is too old.	Clean. Replace.

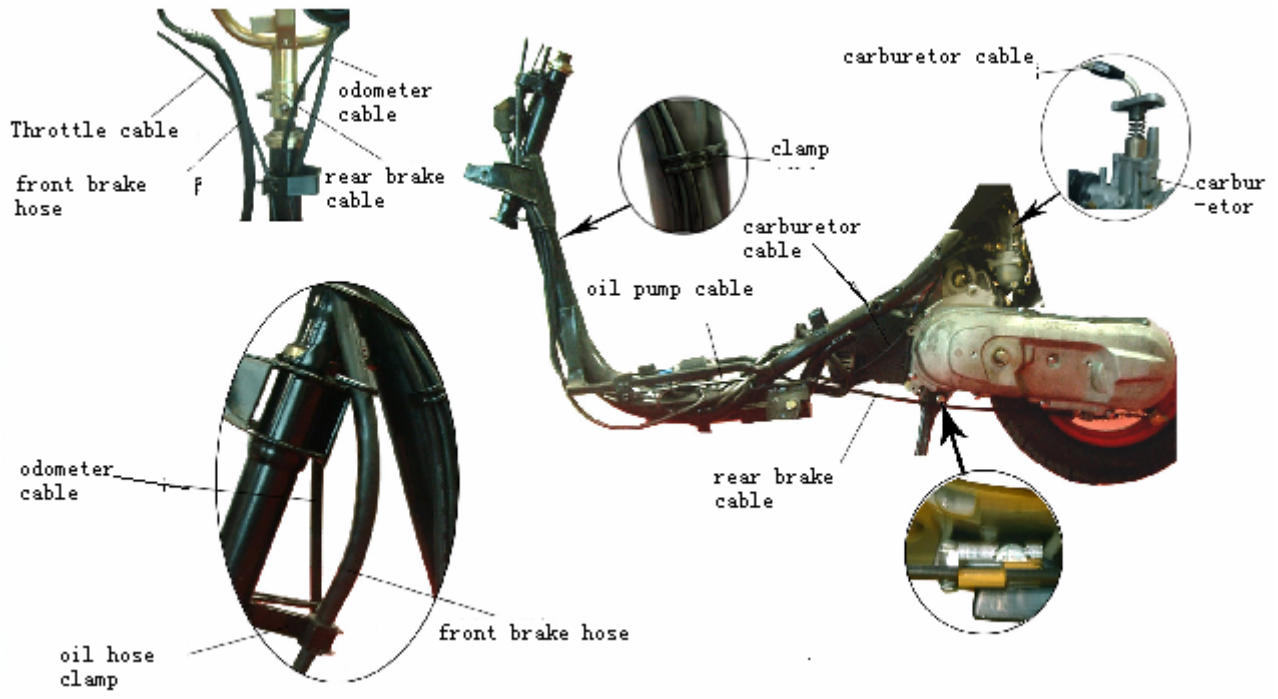
CHASSIS

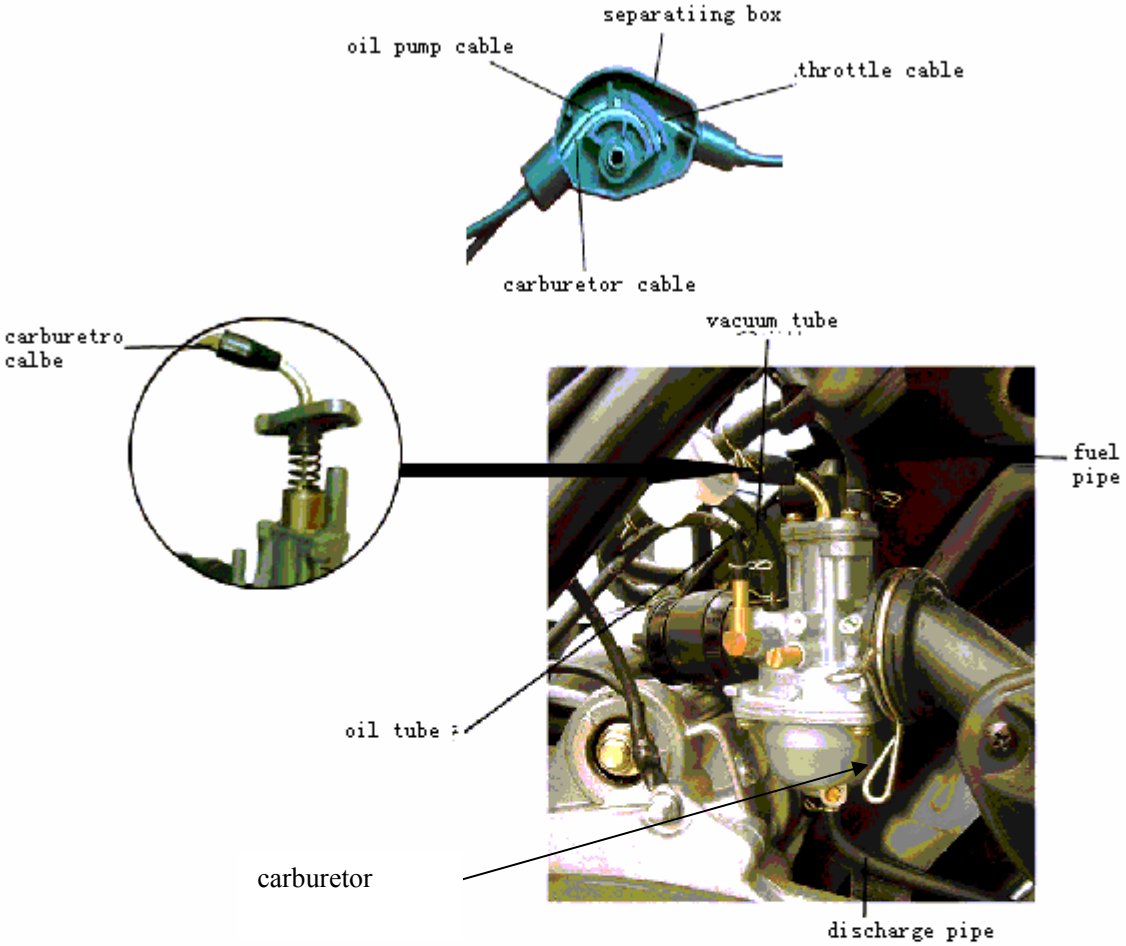
Complaint	Symptom and possible causes	Remedy
Handling feels too heavy.	1. Steering stem nut overtightened. 2. Broken bearing/race in steering stem. 3. Distorted steering stem. 4. Not enough pressure in tires.	Adjust. Replace. Replace. Adjust.
Wobbly handle.	1. Loss of balance between right and left front suspension. 2. Distorted front axle or crooked tire.	Replace. Replace.
Wobbly front wheel.	1. Distorted wheel rim. 2. Worn front wheel bearings. 3. Defective or incorrect tire. 4. Loose nut on axle. 5. Loose nuts on the rear shock. 6. Worn engine mounting bushing. 7. Loose nuts or bolts for engine mounting.	Replace. Replace. Replace. Retighten. Retighten. Replace. Tighten.
Front suspension too soft.	1. Weakened springs. 2. Oil leakage of shock absorber,	Replace. Replace.
Front suspension too stiff.	1. Not enough grease, 2. Worn suspension arm spacer	Refill. Replace.
Noisy front suspension.	1. Not enough grease. 2. Loose nuts on suspension.	Refill. Retighten.
Wobbly rear wheel.	1. Distorted wheel rim. 2. Defective or incorrect tire. 3. Loose nuts on the rear shock absorber. 4. Worn engine mounting bushing. 5. Loose nuts or bolts for engine mounting.	Replace. Replace. Replace. Replace. Retighten.
Rear suspension too soft.	1. Weakened spring. 2. Oil leakage of rear shock absorber.	Replace. Add lubrication
Noisy rear suspension.	1. Loose nuts on shock absorber, 2. lubrication leakage.	Adjust Add lubrication.

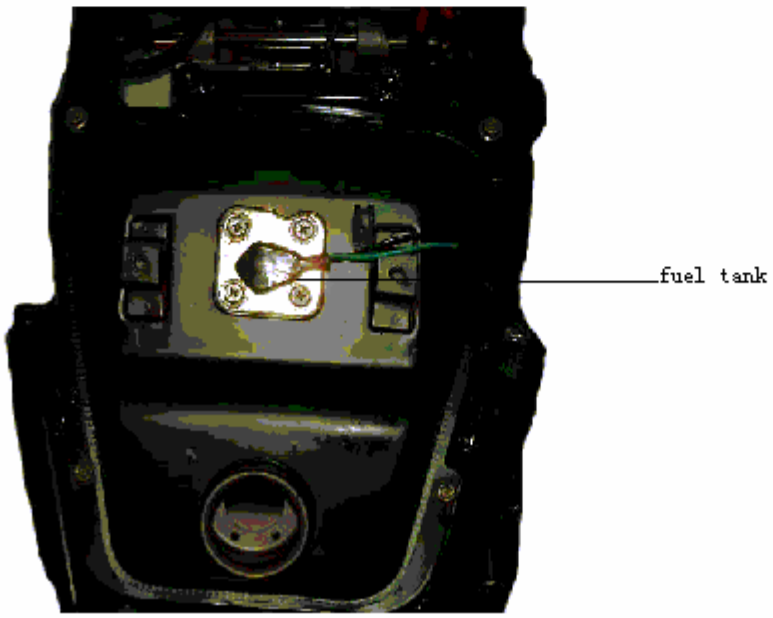
BRAKES

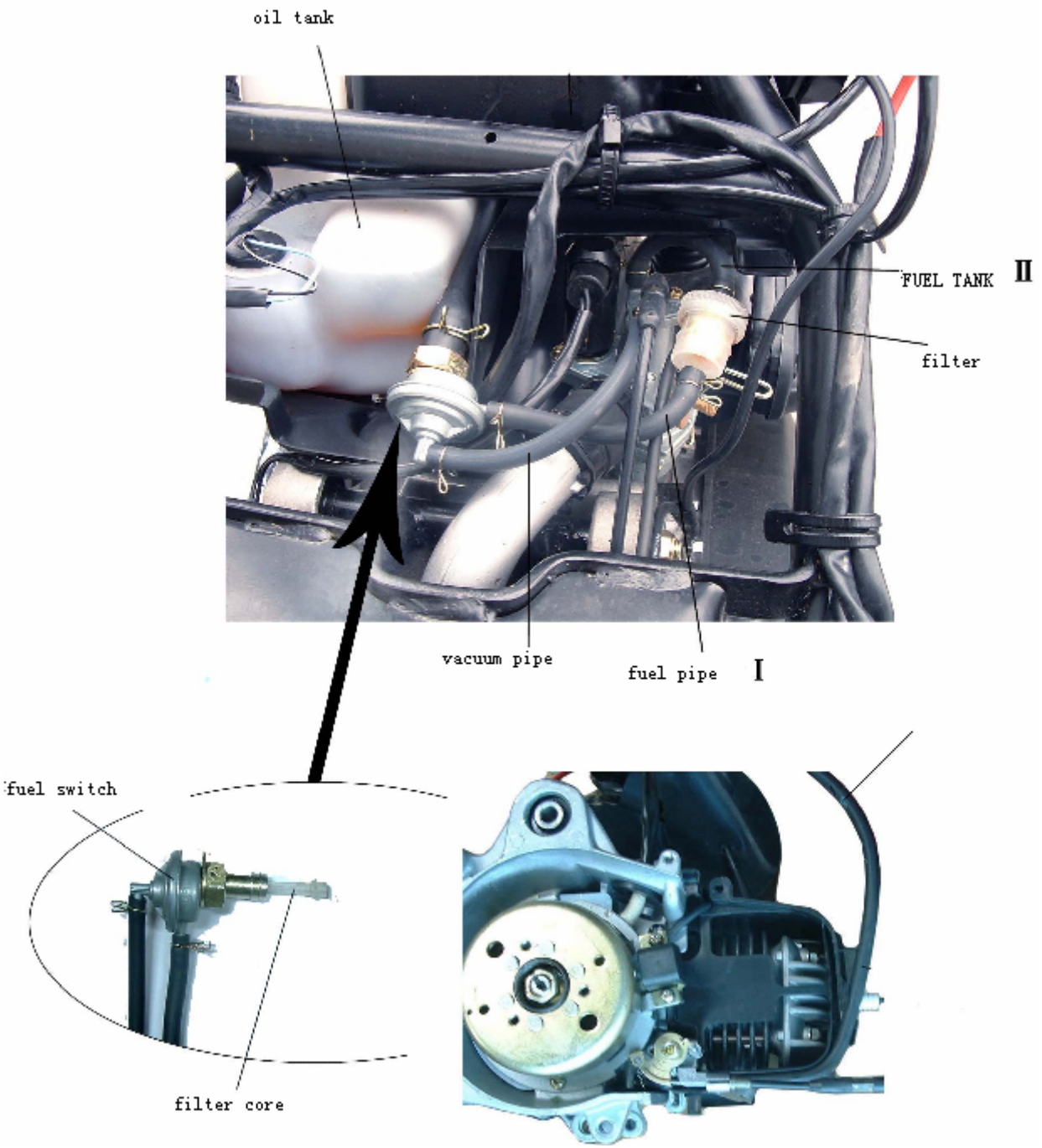
Complaint	Symptom and possible causes	Remedy
Insufficient brake power.	1. Leakage of brake fluid from hydraulic system. 2. Worn pad. 3. Oil adhesion on engaging surface of pad. 4. Worn disc. 5. Air entered into hydraulic system. 6. Worn shoe. 7. Friction surfaces of shoes are dirty with oil. 8. Excessively worn drum. **9.** Too much brake lever play.	Repair or replace. Replace. Clean disc and pads. Replace. Bleed air. Replace. Replace. Replace. Adjust.
Brake squeaking.	1. Carbon adhesion on pad surface. 2. Tilted pad. 3. Damaged wheel bearing. 4. Worn pad. 5. Foreign substance entered into brake fluid. 6. Clogged return port of master cylinder. 7. Brake shoe surface glazed. 8. Loose front-wheel axle or rear-wheel axle nut. 9. Worn shoe.	Repair surface with sandpaper. Modify and fitting. Replace. Replace. Replace brake fluid. Disassemble and clean master cylinder. Repair surface with sandpaper, Tighten to specified torque. Replace.
Excessive brake lever stroke.	1. Air entered into hydraulic system. 2. Insufficient brake fluid. 3. Improper quality of brake fluid. 4. Worn brake cam lever. 5. Excessively worn shoes and/or drum.	Adjust Refill Replace Replace Replace
Leakage of brake fluid.	1. Insufficient tightening of connection joints. 2. Cracked hose. 3. Worn piston seal.	Replace or repair Replace. Replace.
Brake drags.	1. Rusty moving parts.	replace

WIRE, CABLE AND BRAKE HOSE ROUTING




separatiing box
oil pump cable
throttle cable
carburetor cable
carburetro
calbe
vacuum tube
fuel
pipe
oil tube
carburetor
discharge pipe

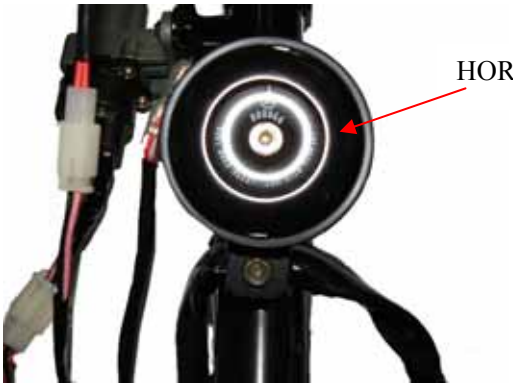

fuel tank


oil tank
FUEL TANK
II
filter
vacuum pipe
fuel pipe
I
fuel switch
filter core

Starting relay

Ignition coil

CDI

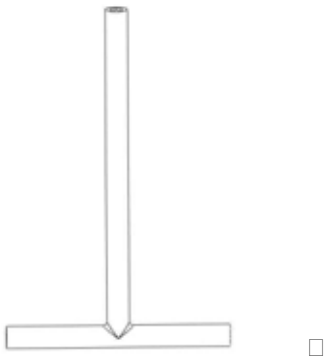


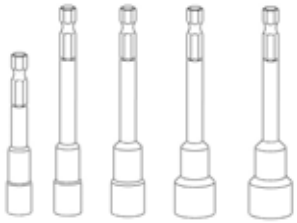
HORN

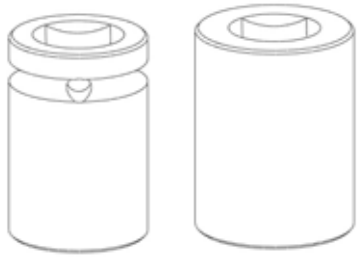
POWER SWITCH

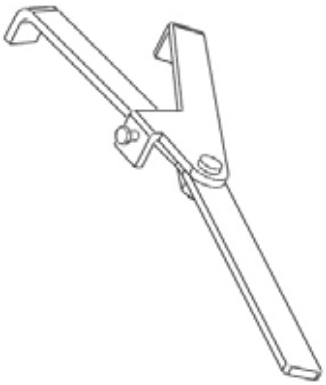
SPECIAL TOOLS LISTED BELOW FOR REMOVAL AND REINSTALLATION

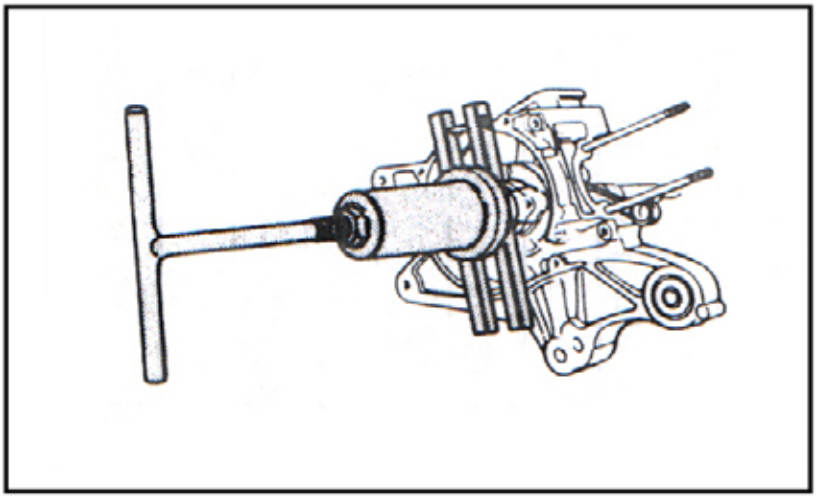
NO.	TOOL NUMBER	DESCRIPTION
1	T01	“T”shape of sleeve
2	T02	sleeve tools（7mm,8mm,10mm,12mm,13mm）
3	T03	flywheel remover
4	T04	sleeve (18mm,24mm)
5	T05	screw remover
6	T07	cylinder pressure gauge
7	T08	piston pin remover
8	T09	spark plug remover
9	T10	flywheel lockbolt remover
10		clutch clamp











TIGHTENTING TORQUE O F SCREW THREAD PARTS

ENGINE

ITEM	N．M
Cylinder guide cover tapping screw	1-4
Fan guide cover lock bolt	10-12
Cylinder cover locknut	15-18
Spark plug	15-18
Inlet pipe lock bolt	10-12
Cooling fan impeller lock screw	10-12
Flywheel lock bolt	45-50
Magneto stator coil lock screw	10-12
Magneto exciting lock screw	3-5
Oil pump lock screw	5-9
Right crankcase lock bolt	10-12
Bearing press board lock bolt	10-12
Cylinder double head bolt	15-18
Motor tightening bolt	10-12
Left crankcase cover lock screw	10-12
Left crankcase cover lock bolt	10-12
Main drive wheel face locknut	35-38
Driven wheel face locknut	35-38
Driven wheel face clutch locknut	55-60
Exceeding clutch outside lock screw	10-12
Electrical start idle press board screw	10-12
Gearcase lock bolt	10-12
Left crankcase discharging oil hole lock bolt	22-25
Left crankcase positioning pin shaft locknut	18-22